HARMON INDUSTRIES, INC.

1986 ANNUAL REPORT

"Celebrating Our 40th Anniversary of Service to Our Customers"

Corporate Profile

Harmon's stated goal is to become a fully integrated and premier supplier of railroad and transportation communication and control products in the United States. Each year Harmon draws closer to that objective as its innovative electronic products continue to supplant those of more established competitors.

Harmon manufactures an extensive line of railroad signal and communication equipment, traffic control systems, grade crossing hardware, and allied components.

Harmon is innovative and heavily engineering oriented, a posture that has resulted in a steady flow of new products augmented by timely acquisitions.

The executive management team is both young and experienced. The average age of its senior executives is well under 50, and they have been with the Company for an average of more than 10 years.

The company was incorporated in Missouri in 1961 as the successor to a business which commenced operations in 1946.

The Company's headquarters is located in Blue Springs, Missouri. Its largest subsidiary, Harmon Electronics, Inc., operates four manufacturing facilities: two in Grain Valley, Missouri, and two in Warrensburg, Missouri. Its Electro Pneumatic Corporation subsidiary has a manufacturing plant in Riverside, California, and its Modern Industries, Inc. subsidiary has plants in Louisville, Kentucky, and Jacksonville, Florida.

The Company's common stock is traded in the over-the-counter market, and it is quoted on the NASDAQ National Market System under the symbol HRMN.

Cash dividends were instituted in 1978, and the dividend was subsequently increased on two different occasions. The current rate is 12½ cents per share annually, which is paid semi-annually at 6¼ cents a share.

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Financial Highlights (Unaudited)

Years ended December 31,	**1986**	1985
Net sales	**$47,223,000**	$52,993,000
Expenses	**$43,085,000**	$46,863,000
Income taxes	**$ 2,039,000**	$ 2,909,000
Net income	**$ 2,099,000**	$ 3,221,000
Net income per share	**$ .43**	$ .73
Dividends per share	**$ .125**	$ .125
Return on sales	**4.4%**	6.1%
Return on year end equity	**20.0%**	22.9%
At year end		
Working capital	**$11,599,000**	$ 9,962,000
Long-term debt	**$13,793,000**	$ 6,604,000
Approximate number of shareowners [1]	**750**	900
Number of employees	**772**	711
Outstanding shares	**4,471,587**	4,768,847

[1] Includes only *registered* shareholders. Since a number of shareholders hold their shares in "street name", the number of individual shareholders is larger than the amount shown.

Robert E. Harmon
Chairman and President

Financial figures were disappointing for 1986. Our sales were off 11%, and our earnings slipped 35%. This performance had little to do with our products, but much to do with an unusual industry situation that restricted sales prospects in the short run but, paradoxically, that should provide growth opportunities to railroad suppliers that can adjust to current changing market conditions. We are just such an organization.

Railroading is changing rapidly. The railroads are grappling with the problem of trying to define their optimum role in an intensely competitive transportation environment. Deregulation is the catalyst. Railroads have been consolidating and divesting themselves of non-productive assets and expanding into other fields of transportation such as barge and ocean shipping, trucking, and airlines. In this scenario, railroads purchased less equipment than usual last year—partially to conserve cash to effect mergers and partially to avoid enhancing properties they may eventually sell. As a result, 1986 was a difficult selling environment.

Nonetheless, if analysts and investors were to conclude that we are alarmed or disturbed by the recent railroad consolidations, they would be badly mistaken. We have been quietly positioning Harmon over the past several years to take advantage of the new market services that the strong, lean transportation companies of the future will demand. In a word, I am talking about productivity. Productivity in its broadest sense—in our plants, of course, but even more important, in products and *services* that demonstrably increase our customers' productivity, or return on *their* invested capital.

Harmon is intensely market driven. Its research and development centers around products whose use saves money for railroad customers—either directly through increased performance or longevity, or indirectly through reduced need for labor-intensive supervision and maintenance.

These products have included locomotive controls that conserve fuel, remote electronic train inspection stations that greatly reduce defect-related train accidents, and an entire array of signal and control devices that sharply increase performance and reduce maintenance costs. The development of our Electro Logic

interlocker, together with our new universal code emulator, will eliminate the need for a majority of the expensive relays that have been the backbone of signal systems since their introduction over a century ago.

In the space of ten years, these and other innovative products—plus judicious acquisitions—have propelled Harmon into a lead role in the sale of electronic signal and control equipment to Class I railroads.

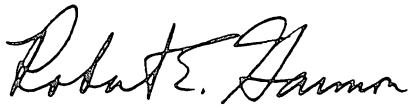
Last year, for example, we acquired Modern Industries, Inc. of Louisville, which is a specialist in heavy manufacturing—cantilevers, steel signal cases and wayside bungalows that house the electronic equipment common to all railroads. This acquisition provided a vital missing product link and advanced us toward our goal to become the nation's premier railroad systems supplier.

With Modern, we were able to make a very competitive bid for the sale of an entire signal system for Amtrak, the largest system yet offered using Harmon products almost exclusively. Without Modern, we would have had to subcontract much of the case wiring and hardware work to competitors, and our bid would likely have been too high.

Internally, we worked very hard to enhance our own productivity—through increased use of automated equipment and re-design of some of our products. Our financial statements reflect this. Despite an 11% drop in sales, we were able to keep our cost of sales on a percentage par with those of last year. Our selling and administrative expenses were higher because of legal and other costs incident to our acquisitions and because we chose to avoid cutting staff in vital areas. To do otherwise would have dressed up last year's financial performance at the expense of too many tomorrows.

In this regard we also acquired a 23% interest in Phoenix Data, Inc., which makes scientific data conversion and data acquisition products for military, aerospace, medical and industrial markets worldwide. We are also investigating other acquisitions that would give us a strong market share in certain vital railroad products.

As we mark the completion of 40 years in supplying electronic signals and controls to the railroads, we see an expanding role ahead. Unprecedented market opportunities are emerging because railroads are seeking to divest themselves of non-productive assets and costly work rules. A broadscale demand for equipment leasing and services is beginning to develop. This will inevitably create opportunities on a scale larger than the entire railroad communications and signal industry. This is something we have been quietly preparing for over several years, and we expect to play a vital role in this new market that is only now unfolding.



Robert E. Harmon
Chairman and President

Blue Springs, Missouri
March 15, 1987

Harmon Electronics, Inc.

In late 1986, Harmon Electronics, Inc. (HEI), formerly an operating division of Harmon Industries, Inc., was established as a wholly-owned subsidiary. HEI is the largest of Harmon Industries' three operating subsidiaries in terms of sales, earnings, employees and plant locations. It produces electronic signal and control products used at rail/highway grade crossings, communications products, plus train inspection stations, and traffic control systems. HEI also manufactures and markets printed wiring boards for itself and other Harmon subsidiaries as well as for non-affiliated manufacturers of varied electronic products. It maintains two production plants in Grain Valley and two other plants approximately 50 miles away in Warrensburg.

One Warrensburg plant is now essentially dedicated to the production of printed wiring boards. Heavy hardware production, which was performed at the second plant, has been transferred to the Company's newest subsidiary, Modern Industries, Inc., of Louisville, Kentucky, which specializes in that type of heavy manufacturing. The remaining plant is now producing sub-assemblies and finished metal enclosures for electronics products.

James P. Lemieux, President

Product Development

HEI completed development of a Universal Code Emulator late in 1986 and made its first shipment in February, 1987 (see photo on opposite page). In layman's terms, this is an electronic box that can simulate and imitate a variety of code signals that are now used throughout railroading to activate signal lights, rail switches, and other controls.

A second engineering achievement in 1986 was the development of an all-new locomotive radio. This radio will send and receive vital high speed data between the locomotive and railroad command centers. It may also do double duty as a voice radio. It can operate under the full control of a locomotive-mounted computer or a special control unit accessible to the locomotive engineer. First field trials are scheduled for late spring 1987.

This radio is HEI's initial product offering in the brand new market area of Advanced Train Control Systems (ATCS). ATCS is an entirely new concept for railroad operations, currently being defined by a coordinated effort of the railroad and rail supply industry. Harmon is participating in this effort and has a wide array of products in the conceptual stage and some in active development, toward filling the needs of the industry in the 1990s. A few of these products may yield major sales in the next several years, and ATCS products are expected to be a major contributor to our growth in the next decade.

Train Inspection Stations

HEI completed a major software upgrade program for its train inspection stations, which greatly increased their efficiency and added many new programmable functions. Train inspection stations have evolved into a major product area where Harmon and only one other competitor dominate the market. We believe our new software programs will give our

Harmon's Universal Code Emulator (UCE-1), a very versatile device that can communicate in a variety of different code "languages" currently used to control wayside signal equipment. This permits piecemeal replacement of older electromechanical equipment still in common use. Bob Danley, Signal System Product Manager for HEI, reviews a system prior to shipment. ▶

CORPORATE STAFF

Robert E. Heggestad

Vice President
Technology

LOCAL CONTROL PANEL
HARMON INDUSTRIES
GRAIN VALLEY, MO. 64029 U.S.A.
UCE-1
UNIVERSAL CODE EMULATOR
HARMON INDUSTRIES
GRAIN VALLEY, MO. U.S.A.
TIMERS
DISPLAY
DIAGNOSTICS SELECT
ELECTRO LOGIC-1

equipment a decisive competitive advantage and provide sales increases for 1987.

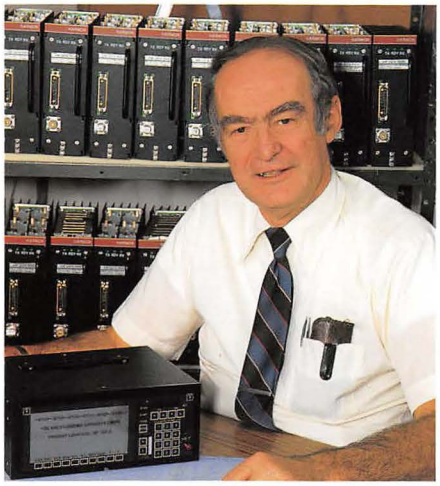
Product Management

Last year HEI created four General Managerial posts. This placed customer relations and profit responsibilities on product managers and costs and production efficiency on production managers. This repositioning aligned traditional skills with accountability. The general managers are one of the prime interfaces with the customer for products and keep new product development on line; the production managers are free to practice their art: quality control, manufacturing efficiency, and materials management.

Printed Wiring Boards

During 1986, we obtained Department of Defense approval on our printed wiring boards. This simply means that HEI's boards passed some rigorous standards that now allow subcontractors to use them as components in military contracts. Getting military approval has considerable commercial value. It is a testimonial to quality that is immediately recognized throughout the electronics industry and should prove to be meaningful as we continue to expand our production to serve non-affiliated companies.

In this regard, HEI has paid particular attention to the chemicals it uses and the processes it employs in its manufacturing. We believe HEI's processes now exceed many of the most restrictive pollution standards required anywhere in the United States. The tightening of pollution control standards throughout the U.S. is reducing the number of competitors in the printed wiring board market and should help our sales in the future.



Bob Barnes, HEI's Manager of Communication Engineering, displays the newest data radio for trains.

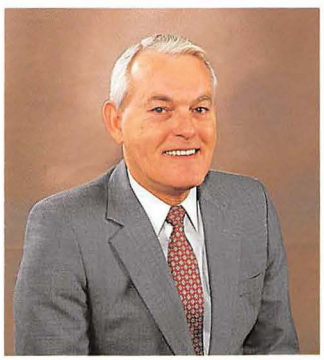
Internal Development

HEI made major advances in quality control, materials management, and production scheduling that resulted in significant cost savings last year. These advances became particularly evident in production scheduling.

The time from order entry to shipment has been halved in the past 24 months. This has two immediate practical effects: inventory carrying costs are less, and customers get their orders sooner than ever before (which has the side effect of also getting rush orders for common products when competitors cannot meet tight delivery schedules).

Conclusion

These efficiency programs, which are computerized modules that HEI began implementing nearly six years ago and will be complete this year, proved their value unequivocally last year. With sales down almost 11%, the test became whether we could operate profitably and simultaneously continue our longer range program of research and development. HEI production costs dropped faster than sales so that when the cost of fixed overhead was included, HEI was able to keep its plant operating margins virtually identical with those of the previous year when sales increased almost 20%. Having found new ways to reduce costs on a permanent basis will pay substantial dividends on profit margins when the sales curve turns positive.



CORPORATE STAFF

Robert G. Clawson

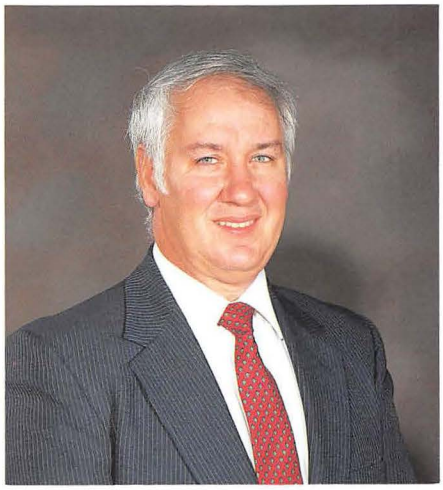
Vice President
Marketing and Sales

Our hot box detector underwent a complete software upgrade in 1986 that greatly increased its efficiency and added many new test functions. Lisa Simons performs a final quality check before shipment. ▶

SIGNAL PROCESSOR
DATA DISPLAY
MODE
FUNCTION
POWER
ON
OFF
ANALOG I/O BOARD

Harmon's acquisition of Modern Industries, Inc. (Modern) last year is the classic example of the whole being greater than the sum of the parts. Modern is the heavy industry side of railroad signaling. It builds cantilever frames on which a wide variety of railroad signal lights are hung, plus gate hardware, flashing lights, and the metal cases and bungalows seen along the tracks that house the electronics that Harmon's subsidiaries and others produce.

Although Harmon already had limited production of cantilevers and crossing gate hardware, it generally had to purchase the cases from Modern or its competitors whenever a total systems installation of both electronics and hardware was required. With railroads becoming increasingly cost conscious, sub-contracting any significant portion of a job either made the bidder less competitive or resulted in wafer thin margins. Similarly, Modern could get very little total systems business simply because it produced few electronic products, and to purchase them from competitors sometimes pushed its costs beyond competitive bid limits.



Charles R. Tucker, President

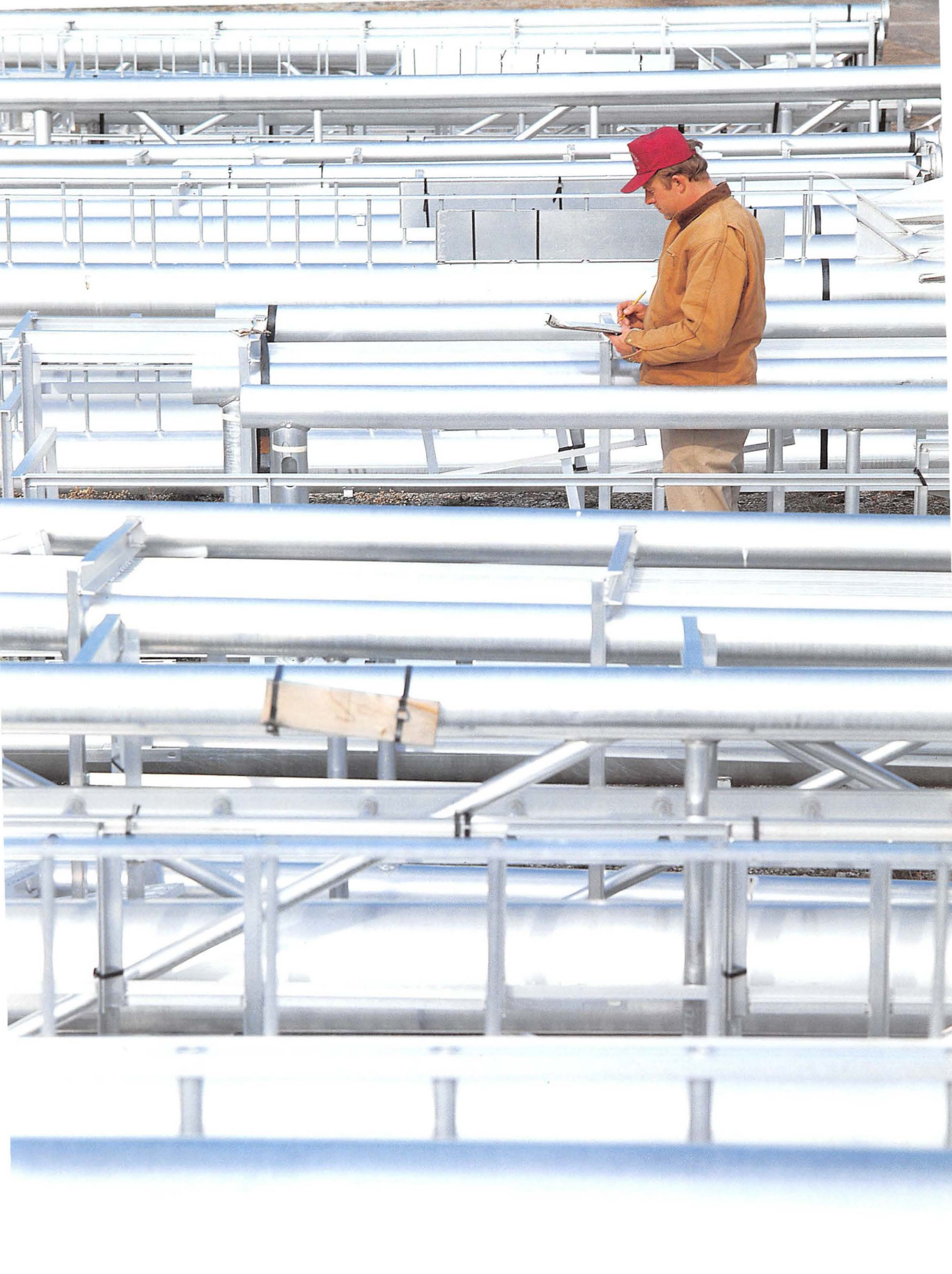
Synergy

Joined together, and including EPC, the combined firms became the most integrated systems supplier in the nation. The total corporate family now has the capacity to design, engineer, manufacture and install completed products to customer specifications. That includes everything from highway crossing gates to cantilevers, electronic controls and control housing units.

The acquisition was also very timely—for two reasons. First, in an effort to simplify its purchasing procedures and fix operating responsibility, the railroad signal industry increasingly prefers to fill its signal equipment requirements from one source, thereby giving the company that produces a complete line of products a powerful competitive advantage in the marketplace. Second, since the railroad industry is now apparently looking to outside vendors to provide ongoing maintenance for this equipment, the original equipment manufacturer has a natural technical and cost advantage for his equipments' maintenance. Thus, integrated complete systems manufacturers now not only enjoy a competitive cost advantage for total systems sales, those same advantages remain for contract maintenance, which is now showing signs of becoming a major new market.

The Modern acquisition gave Harmon a strong physical presence in the east and south, where Modern has its plants. It also freed HEI to pursue its natural business—sophisticated electronics— and transfer the production of its limited hardware output to Modern's plants. In addition, Modern became a major player

Jerry Mudd, Welding Production Supervisor, inventories cantilever light structure components at Modern's manufacturing plant in Louisville. Harmon's expanded entry into metals manufacturing via its acquisition of Modern last year materially broadened the scope of its products and services, enabling it to increase its competitive position—particularly for total systems installations. ►



in its own right. Harmon's reputation for excellence and sound finances is not lost on Modern's customers who also look to purchase from reliable sources.

Harmon acquired Modern in July, 1986 for 409,998 shares of Harmon common stock, having a market value of approximately $2.7 million. Modern's sales in 1986 were roughly $12.4 million.

Products

Established in May, 1964, Modern Industries is a two-plant operation with corporate headquarters in Louisville, Kentucky. Custom hardware is manufactured in the Louisville operation. The Louisville operation is also utilized to assemble the "packaged crossings". A packaged crossing is one in which the case or bungalow is pre-wired for the crossing such that the installer simply has to make the connections that ship with the package.

The Jacksonville facility serves as the production operation for standardized cantilevered light structures and a hardware products distribution center to the railroads of that region.

Combined, the two plants cover approximately 110,000 square feet and employ nearly 100 people.

New Markets

In an industry that appears to be shrinking, Modern has found new markets in short-line and regional railroads. Fully one-third of Modern's sales are made to these haulers. These railroads have found new life in upgrading and efficiently operating short sections of track—lines that were formerly burdens to larger railroads whose high fixed overhead made it uneconomical to maintain lesser used lines, but which a much smaller company can operate profitably.

Ralph McCoy checks electronic component installations in a Modern wired relay case. These cases, which are found along countless miles of track throughout the nation, are another product Harmon acquired when it bought Modern.

Conclusion

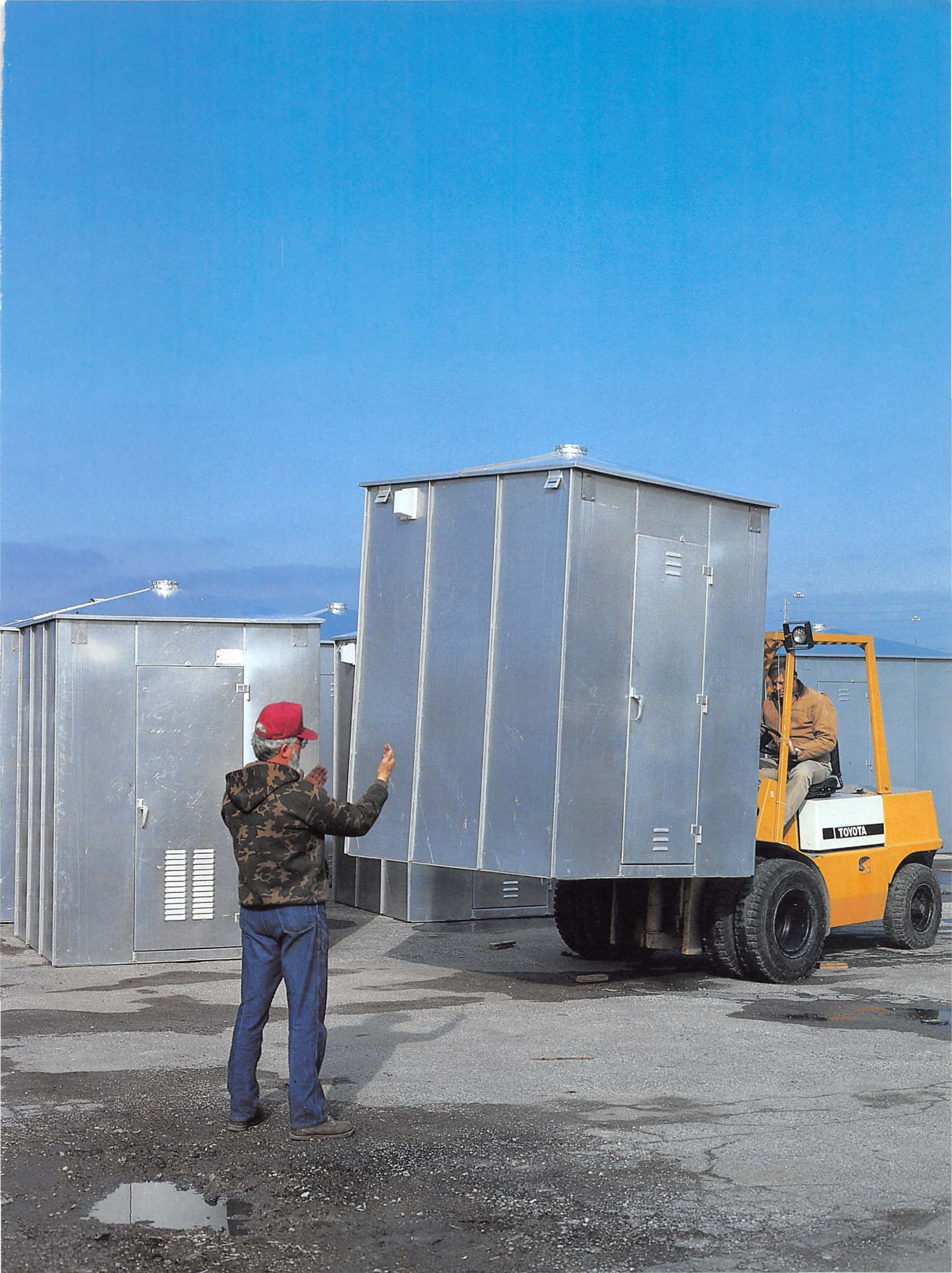
Fortunately for Modern, many of these smaller railroads presently need major overhauls, including highway-crossing warning systems, wayside signals and train-controls. Modern is particularly suited to this work as it not only can make and deliver a variety of products through its association with Harmon, but also provide service and installation that is attractive to the smaller roads that typically do not maintain a technical repair work force. Thus Modern's trained crew of installers and maintenance personnel becomes Harmon's cadre for the contract maintenance opportunities now being contemplated by the railroads.

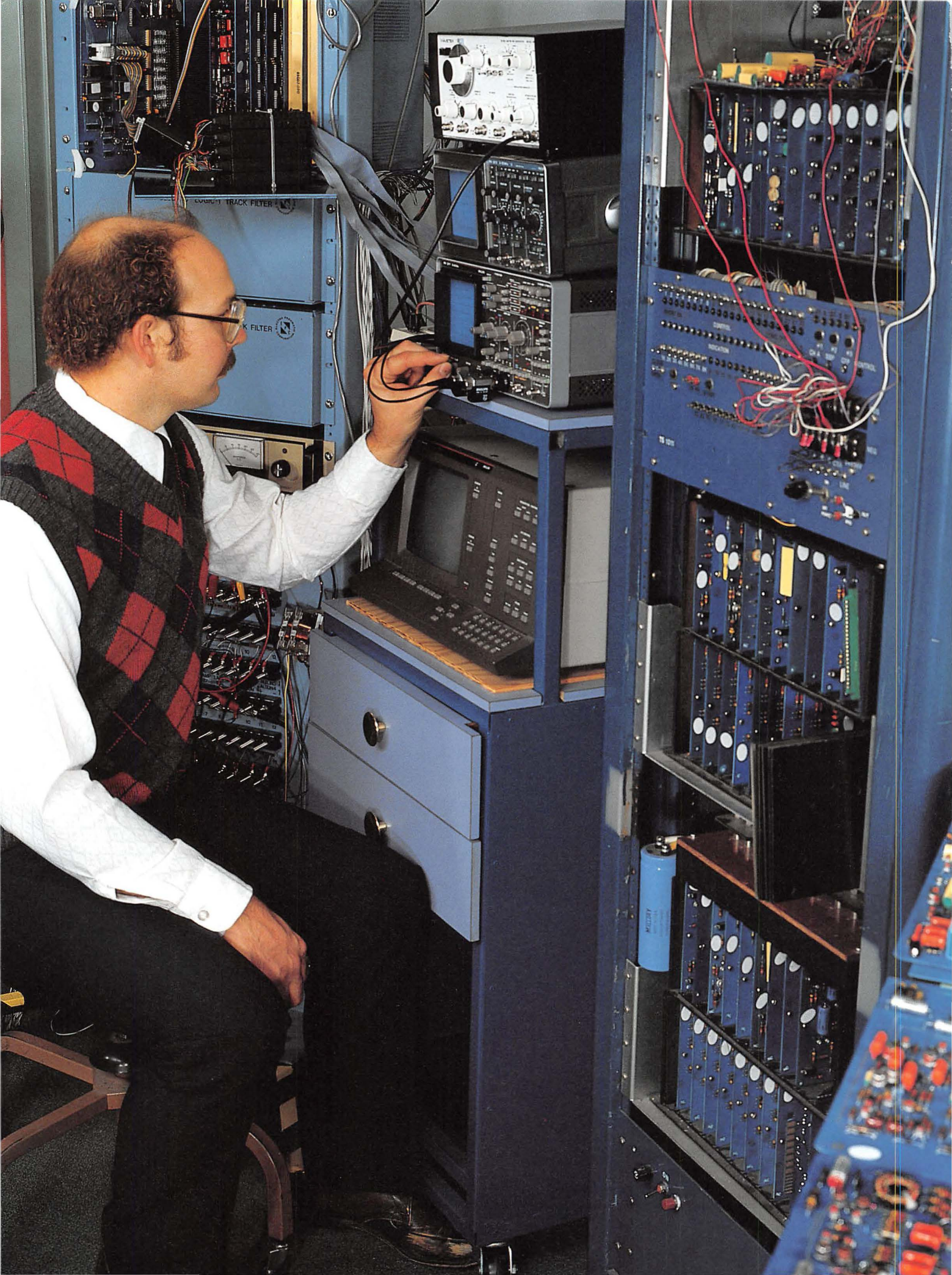
CORPORATE STAFF

Ronald G. Breshears

Vice President
Human Resources

Modern's Jimmy Cannon guides a 6x6 foot aluminum bungalow into place for shipment. These structures, never before produced by Harmon, are commonly used by railroads throughout the U.S. to house the sophisticated electronics that power railroad signals and switches. ▶


TOYOTA



Harmon acquired Electro Pneumatic Corporation (EPC) in August of 1984 for two basic reasons. EPC had developed an important product line which was technologically superior to that of its competitors, and this product line gave Harmon entry into wayside signal controls, a market in which Harmon had no representation.

Complementary Products

The acquisition had little product overlap. Harmon dealt in signals and controls associated with rail/highway grade crossings, and EPC provided signal equipment that is used for controlling main line train operations.

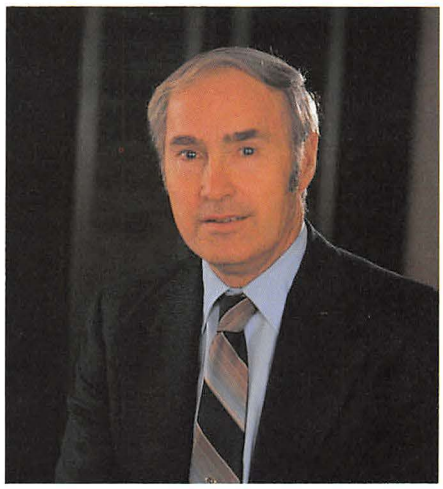
It was a sound acquisition for both parties. Harmon got a quality product line that broadened its capability as a total systems supplier. Both companies benefitted from having similar electronic manufacturing facilities. This facilitated the switching back and forth of product manufacture, which generally smoothed out production peaks and valleys for both companies. EPC found substantially greater receptivity to its sales presentations once it began operating under the umbrella of Harmon, which by 1984 was generally recognized by the railroads as a premier supplier of innovative and cost effective signals and control systems. In a large measure, Harmon's ownership of EPC gave EPC substantially increased acceptance and stature among railroad buyers.

Importance of Size

This is no small matter. Railroads are reluctant to deal with smaller companies—particularly in situations where their products are linked to rail safety. The buyer is very concerned about a seller's long-term commitment to that market and its financial ability to support that product with service, warranties and repair parts.

Thus a relatively small company making railroad products not only must develop a demonstrably superior product, it also must convince the railroad buyer it has staying power and will be around to service those products for many years. This latter requirement plays into the hands of the larger, more established railroad suppliers and enables them to effect acquisitions of attractive, smaller companies that perhaps would be more difficult to achieve in other industries.

While the effect of Harmon's ownership of EPC is difficult to quantify, particularly in the light of EPC's competitively superior products, it is a fact that Conrail, Santa Fe, Seaboard Systems, Amtrak, Chicago & Northwestern, Denver & Rio Grande, Canadian National, and Canadian Pacific became larger buyers of EPC products only after Harmon acquired EPC. This surge of new and large customers (15% of EPC's 1986 sales were secured from first-time buyers) bodes well for EPC. Sales from these new customers are expected to increase and comprise 25%-30% of EPC's sales for 1987.



Richard E. Risely, President

◀ **The new Electro Logic system will replace an entire bungalow of signal relays at controlled-switch locations, making a virtual all solid state link between the railroad dispatcher and the field signals and switches. John Cipollone makes final tests in preparation for the first installation, which promises great simplification and cost savings for our customers, the railroads.**

Efficiency in manufacturing. Thuy Duong is guided by semi-automatic insertion equipment that minimizes assembly errors.

EPC's principal product is its Electro Code Signal System, an electronic DC track circuit which is coded at each end to control the block signals that direct the movement of trains once they have moved beyond the direct controls employed at railroad interlockings, terminals and switching sites.

Electro Code products have an unusual feature: they use the rail itself as the transmission line between signal locations, thus doing away with erecting and maintaining costly overhead transmission lines and vital signal relays.

The design of Electro Code products illustrates a basic fundamental tenet of the Harmon strategy: design products that not only perform superbly, but that also increase the customer's productivity by reducing subsequent traditional operating costs.

Electro Code is now generally recognized as the industry leader in this product line, and EPC estimates it has a 70% to 80% share of that market.

Recent Developments

Throughout 1986, EPC concentrated on improving margins and developing major new microprocessor-based electronic products. EPC worked to increase plant and production efficiency by implementing computerized production planning systems that addressed work scheduling, material planning, and inventory control. EPC engineers also continued developing a broad range of software for its line of Electro Code products to permit them to perform more functions.

During 1986, EPC continued development of Electro Logic, a major new microprocessor-based control system having considerably advanced safety features. It will replace complex relay installations now employed where railroad tracks intersect.

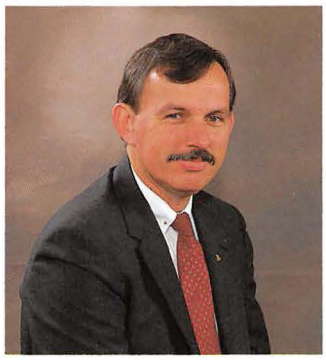
Electro Logic can analyze the field status of signal lamps and simultaneously interpret incoming data to determine whether it is safe to operate those signals.

Synergy

The Electro Logic has been designed specifically to interface with Harmon's Universal Code Emulator (see page 4), thus capitalizing on the combined expertise of each company to promote the sale of entire signal systems, rather than individual components.

1987 Outlook

EPC anticipates a strong selling year, particularly because of new product introductions. Engineering costs for customer software are expected to decline on a per job basis principally because the major proprietary software developments completed this year are expected to reduce the engineering time needed for subsequent projects. Cost controls implemented in 1986 are also expected to have a beneficial impact on total costs for 1987.



CORPORATE STAFF

Vincent D. Burget

Vice President
Corporate Affairs

Electro Code 4s are the industry's benchmark for electronic signal control systems nationwide. Jeff Metzler readies a shipment which will control miles of train signals and simultaneously eliminate costly, high maintenance "pole lines" and relays. ▶

(In thousands, except for per share items)

		Years ended December 31[1]			
		1986	1985	1984	1983
Operations	Net sales	**$ 47,223**	$ 52,993	$ 44,445	$ 29,618
	Cost of sales	**32,693**	36,521	32,669	22,355
	Gross profit	**14,530**	16,472	11,776	7,263
	Selling, general and administrative expenses	**9,362**	8,497	6,332	4,748
	Operating income	**5,168**	7,975	5,444	2,515
	Other expense (income)	**1,030**	1,845	793	513
	Earnings from continuing operations before income taxes	**4,138**	6,130	4,651	2,002
	Income taxes	**2,039**	2,909	2,214	900
	Earnings from continuing operations	**2,099**	3,221	2,437	1,102
	Discontinued operations	**—**	—	—	—
	Net earnings	**$ 2,099**	$ 3,221	$ 2,437	$ 1,102
	Effective income tax rate	**49.3%**	47.5%	47.6%	45.0%
	Return on sales	**4.4%**	6.1%	5.5%	3.7%
	Return on year end equity	**20.0%**	22.9%	15.6%	8.5%
	Weighted average outstanding shares	**4,854**	4,430	4,733	4,650
Per Share Data[2]	Net earnings	**$ .43**	$ .73	$ .51	$ .24
	Cash dividends	**.125**	.125	.0875	.075
	Book value	**2.34**	2.94	3.21	2.78
	Price/earnings ratio range[3]	**15.4-27.3**	8.2-16.1	7.8-13.7	14.3-28.2
Other Data	**(At Year End)**				
	Total Assets	**$ 34,045**	$ 30,111	$ 30,627	$ 21,880
	Working capital	**11,599**	9,962	12,370	10,510
	Long-term debt	**13,793**	6,604	6,752	3,956
	Stockholders' equity	**10,470**	14,038	15,579	12,925
	Current ratio	**2.36:1**	2.17:1	2.65:1	3.35:1
	Quick assets ratio	**.96:1**	.90:1	1.07:1	1.27:1
	Debt to equity ratio	**2.25:1**	1.14:1	.97:1	.69:1
	Capital additions, net	**2,212**	2,919	1,467	1,082
	Depreciation and amortization	**2,074**	1,775	1,353	1,082
	Outstanding shares	**4,472**	4,769	4,850	4,650

(1) The Company changed its year end to December 31 from September 30, effective December 31, 1981.
(2) Adjusted for all stock splits and stock dividends through December 31, 1986, inclusive.
(3) High and Low bid prices divided by year end earnings per share.

* *Unaudited*

Years ended September 30,[1]						
1982	1981	1980	1979	1978	1977	1976
$ 27,783	$ 30,248	$ 27,693	$ 21,113	$ 12,226	$ 11,002	$ 8,108
20,120	21,841	21,482	15,907	9,234	7,836	6,020
7,663	8,407	6,211	5,206	2,992	3,166	2,088
4,420	4,677	3,723	3,131	2,115	1,815	1,550
3,243	3,730	2,488	2,075	877	1,351	538
585	699	546	240	(53)	55	80
2,658	3,031	1,942	1,835	930	1,296	458
1,082	1,335	788	800	407	611	190
1,576	1,696	1,154	1,035	523	685	268
—	(6)	184	340	112	55	—
$ 1,576	$ 1,690	$ 1,338	$ 1,375	$ 635	$ 740	$ 268
40.7%	44.0%	41.4%	44.3%	44.5%	47.2%	41.5%
5.7%	5.6%	4.8%	6.5%	5.2%	6.7%	3.3%
12.9%	15.4%	14.1%	16.3%	8.6%	10.5%	10.6%
4,650	4,650	4,650	4,650	4,650	2,688	2,279
$ .34	$ .36	$ .29	$ .30	$ .14	$ .28	$ .12
.075	.075	.0625	.0625	.0625	—	—
2.62	2.35	2.04	1.82	1.58	2.61	1.11
7.9-12.1	7.9-18.8	8.0-18.5	3.4-11.9	7.7-12.7	2.0-5.5	5.3-9.8
$ 19,330	$ 19,219	$ 21,353	$ 15,495	$ 10,390	$ 9,935	$ 5,211
9,052	9,031	10,224	6,816	4,822	5,338	1,738
3,324	3,638	6,019	1,474	—	—	462
12,172	10,945	9,499	8,452	7,368	7,023	2,534
3.63:1	3.08:1	2.84:1	2.27:1	2.70:1	2.90:1	1.82:1
.94:1	1.04:1	.98:1	.80:1	1.20:1	1.87:1	.65:1
.59:1	.76:1	1.25:1	.83:1	.41:1	.41:1	1.06:1
1,908	1,873	1,687	1,073	1,281	865	391
996	792	565	418	350	305	276
4,650	4,650	4,650	4,650	4,650	4,650	2,279

Management's Discussion and Analysis of the Summary of Operations and Financial Condition

Results of Operations
Sales declined 10.9% in 1986 after four consecutive annual sales increases. Net earnings fell 34.8% following three consecutive increases in annual earnings. In general, the railroads curtailed purchases of many goods and services during 1986. They collectively sought to reduce costs to remain competitive with the deregulated trucking industry, which promoted freight rate reductions to gain entry into traditional rail freight business. In addition, a series of contemplated railroad mergers and acquisitions further reduced rail equipment purchases as railroads sought to conserve cash to effect acquisitions and to avoid enhancing rail properties that might soon be abandoned or sold. Further, the railroads' need to reduce costs resulted in widespread demands for price reductions from suppliers, which further eroded margins.

Sales Analysis—1986-1984
Harmon's 1986 sales of $47.2 million include approximately $5 million developed by Modern Industries, a subsidiary acquired on July 31, 1986. Without Modern's input, total sales would have declined approximately 20% from those of 1985 and 5% from those of 1984. Harmon's 1986 sales declined in every product category. Despite this, we believe we maintained or increased market share in most of our products, and that our sales decline can be attributed chiefly to a substantially reduced market. The Company's 1985 sales exceeded its 1984 sales by 19.2% primarily because of an increase in shipments of signal products and radios. In addition, 1985 sales included a full 12 months sales contribution from its EPC subsidiary versus only 5 months in 1984 following its acquisition by Harmon in August of 1984.

Gross Profit
Gross profit declined 11.8% in 1986 largely because of the 10.9% decline in sales, a portion of which included sale of products from its Modern Industries subsidiary, which traditionally carry narrower profit margins than are typically generated from the sale of electronic products. In general, Harmon's ability to maintain a near level of cost of sales (69.2% of sales in 1986 versus 68.9% in 1985 and 73.5% in 1984) in the face of declining volume, price concessions, and the relocation of its metals manufacturing from Missouri to Kentucky in 1986 illustrate management's ability to increase productivity while simultaneously decreasing labor costs. Unlike 1986, gross profits for 1985 gained substantially relative to 1984 following a 19.2% sales gain in 1985, which also included a product mix more heavily weighted toward higher gross margins. In addition, margins also improved because of enhanced productivity following the increased use of labor saving automated production equipment in 1985.

Selling, General & Administrative
As a percent of sales, these costs have steadily increased each year since 1984 from a low that year of 14.2% to a high of 19.8% for 1986. Costs as a percent of sales for 1986 were higher than those of the two previous years because of selected selling price decreases, disproportionate costs relative to the current sales of its Modern Industries subsidiary, and the maintenance of sales staff levels commensurate with those of 1985, even though sales declined 10.9% in 1986. This relationship between costs and sales was aggravated further in 1986 because of

CORPORATE STAFF

Charles M. Foudree

Executive Vice President—
Finance, Treasurer,
and Secretary

higher insurance costs, increased acquisition efforts, and additional expenses to service a larger shareholder base.

With regard to sales staff levels, management believes it is counter productive to reduce sales efforts in a difficult selling environment because the inevitable loss of market share will prove more costly over the long run. The rise in costs for 1985 over those of 1984 largely relate to higher selling and administrative support required of its EPC product line, a reduction in selling prices, and higher bad debt expense.

Other Expenses

These expenses chiefly relate to interest on debt. Expenses for 1985 as a percentage of sales nearly doubled from those of 1984 following the Company's net borrowings of $13.1 million in June, 1985 to redeem a control block of shares owned by SAB Nife AB. By late November, 1985, that debt was reduced to $4.7 million from the proceeds realized from the sale of two public offerings. Thus the 1986 calendar year included substantially lower average debt than that of 1985, and that fact together with lower interest rates prevailing in 1986 reduced "Other Expenses" from $1.8 million in 1985 to $1.0 million for 1986. Other expense for 1987 is likely to approximate that of 1985, however, owing to additional borrowings in 1987 to finance certain acquisitions and the Company's November '86 redemption of certain common stock sold to private investors (see "Stock Transactions").

Income Taxes

The Company's effective tax rate for 1986 was 49.3% of pretax earnings versus 47.5% for 1985 and 47.6% for 1984. The differences between 1986 and the two previous years were largely the phase out of investment tax credits for 1986, the non-deductibility of certain expenses associated with the acquisition of Phoenix Data, Inc. and generally higher state tax rates. The impact of the 1986 Tax Act is expected to result in a significant reduction in our effective income tax rates for 1987 and thereafter.

Stock Transactions

On June 18, 1985, the Company purchased a control block of 2.5 million Harmon common shares for $21.8 million from SAB Nife AB after it advised Harmon's Board of Directors it wished to dispose of its shares. Harmon's Board authorized purchase of the shares to gain greater management flexibility, to expand its shareholder base, and to avoid control of the Company falling into unfriendly hands. To finance this purchase, Harmon borrowed $13.1 million from a bank and sold 1.3 million previously authorized but unissued shares in two private placements (1,032,258 shares to private investors and 258,065 shares to the Company's ESOT—see note 2 of notes to the financial statements). Upon conclusion of these transactions, the control block of 2.5 million shares was returned to the Company's treasury.

Four months after these transactions, Harmon sold 1,105,000 of its common shares (including an underwriting overallotment of 105,000 shares) in a public offering that netted the Company $8.4 million, which it used to reduce the $13.1 million bank loan borrowed the previous June.

In May, 1986, the Company's ESOT purchased 75,000 shares from the private investor group referred to above. On November 17, 1986, the Company redeemed 707,258 shares from the same investor group for $6,993,013, reducing that investor group's holdings to 250,000 shares. Simultaneously, the Company also purchased certain rights on those remaining 250,000 shares for $721,875. The Company's total cost of $7.7 million was financed from borrowed funds under existing bank

	Percentage of Net Sales Year Ended December 31,			Percentage of Change		
	1986	1985	1984	1986 over 1985	1985 over 1984	1984 over 1983
Net sales	100.0%	100.0%	100.0%	(10.9)	19.2	50.1
Cost of sales	69.2	68.9	73.5	(10.5)	11.8	46.1
Gross profit	30.8	31.1	26.5	(11.8)	39.9	62.1
Selling, general and administrative expenses	19.8	16.0	14.2	10.2	34.2	33.4
Operating income	11.0	15.1	12.3	(35.2)	46.5	116.4
Other expense	2.3	3.5	1.8	(44.2)	132.7	54.6
Earnings before income taxes	8.7	11.6	10.5	(32.5)	31.8	132.3
Income taxes	4.3	5.5	5.0	(29.9)	31.4	146.0
Net earnings	4.4%	6.1%	5.5%	(34.8)	32.2	121.2

agreements (see note 3 of notes to financial statements for details).

On December 31, 1986, the Company sold a $2.1 million 9% subordinated convertible debenture in a private placement. The proceeds were used to reduce the bank debt incurred to redeem its common shares from the investor group. The issue falls due in ten years and may be converted into common stock at $9.25 per share prior thereto. For further information, see note 6 of the notes to financial statements.

Of the redeemed 707,258 shares now in the Company's treasury, 227,027 are reserved for the possible debenture conversion, and the remainder is pledged against a new $2 million line of bank credit established on December 29, 1986.

Inflation

Inflation has been a moderately negative factor over the past three years. Wages increased in 1984 and 1985, and supplier costs increased in each of the past three years. While the total increase has been relatively modest, price concessions demanded by customers to secure sales have magnified the effect of cost increases and have made profit margin maintenance most difficult.

Research and Development

Expenditures for research and development have increased each year since 1984 and were approximately 5% of sales for 1986. The Company believes that its R&D budget should not be influenced by near-term sales and earnings projections because research requires a continuity of effort, and longer range performance is tied to new product development. In all instances, research and development expenditures are expensed in the year incurred, and profit margins of new or re-designed products are not burdened with development cost recoveries.

Liquidity

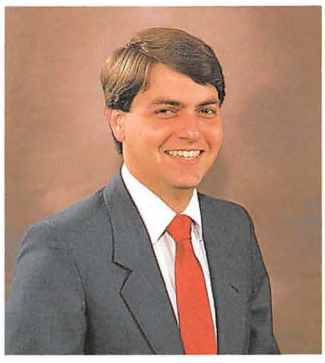
The Company's working capital, current ratio and quick assets ratio improved in 1986 over those of 1985 and closely approximated those of 1984, which was the best of the three years. Liquidity expressed in terms of available financing for future needs declined in 1986 because of borrowings that year to effect acquisitions of the fuel management and train data products of the Ensun Corporation, a minority equity position in Phoenix Data, and for the stock redemptions described above. These recent borrowings, which used a substantial portion of the Company's lines of credit, adversely affected the Company's debt-to-equity ratio, which stood at 2.25:1 versus 1.14:1 for 1985 and .97:1 for 1984.

Capital expenditures were $2.2 million in 1986 compared with $2.9 million in 1985 and $1.5 million in 1984. The decline in expenditures in 1986 largely reflects the absence of new plant construction which commenced in 1984 and was completed in 1985. Capital budgets for 1987 are projected at $1.7 million, which reflects smaller needs for 1987 following larger-than-usual expenditures for 1985 and 1986.

Historically, Harmon's capital expansion programs have been financed principally from internally generated funds. The exception has been plant construction, which has been financed from long-term debt. Acquisitions of products and companies have been a combination of cash, bank financing, and common stock.

Inventories

The Company's inventories increased 15.6% this year while sales declined 10.9%. This is somewhat of a statistical aberration because Modern Industries' year-end inventories are included in their entirety in the consolidated balance sheets but only the final five months of its annual sales (following acquisition) are included in the consolidated statements of income. In general, management has done an excellent job of controlling its inventories during the past several years, generally reducing them relative to the sales dollar. We were less effective in 1986 principally



CORPORATE STAFF

Stephen L. Schmitz

Vice President
Controller

because Modern Industries was its largest acquisition to date, and Harmon's techniques for inventory control were not able to be implemented fully at Modern in 1986.

Credit and Collections

Consolidated receivables were up 5% ($373,000) at 1986 year-end largely due to the effect of the acquisition of Modern Industries, which had year-end receivables of $1.6 million. Measuring receivables at year-end can be somewhat misleading as the amount of sales recorded in the final month of the year is the major determinant of year-end receivables. However, in recent years we have implemented better credit controls which have resulted in a steady decrease in the average number of days from invoicing to collection. Harmon regards its 1986 year-end receivables as the most current of the past three years.

Indebtedness

Long-term indebtedness increased $7 million in 1986 to $13.8 million after being relatively stable at about $6½ million for the two previous years. The increase relates almost entirely to the corporate acquisitions and stock redemptions described above under the heading "Liquidity". For the first time in its history, Harmon issued convertible debentures as an alternate method for financing. Debt at year-end 1986 was also higher principally because 1986's lower profits did not provide the cash flow of the two previous years.

Share Data

Share data presented throughout this report reflects all stock splits and stock dividends since inception. Outstanding shares were constant at 4.65 million from 1978 to 1983. From 1984 onward, outstanding shares changed considerably because of acquisitions, new stock issues, and stock redemptions. The EPC acquisition in 1984 increased outstanding shares by 200,000. The 1985 redemption and public offerings reduced outstanding shares at year-end 1985 by 81,205 to 4,768,847. The 1986 acquisition of Modern increased outstanding shares by 409,998, which amount was reduced later in the year by the stock redemption of 707,258 shares, resulting in outstanding shares of 4,471,587 at 1986 year-end. Weighted average outstanding shares fluctuated considerably during the past several years owing to the variance in timing between issuing shares for acquisitions, sale of previously authorized but unissued shares, and redemptions of outstanding shares in 1985 and 1986.

4th Quarter Results (Unaudited)

Sales for the fourth quarter of 1986 rose 20%, and net earnings increased 6% compared to the same period for 1985. Per share results were identical owing to a higher number of average shares outstanding during the final quarter of 1986 versus 1985. The increase in sales resulted solely from the additional sales brought to Harmon following the acquisition of Modern in August of 1986. Gross profit for 1986 was $700,000 higher at $4.6 million, or 32.8% of sales compared with 33.3% in 1985, which reflects Modern's higher cost of sales relative to traditional Harmon products. Sharply higher selling, general and administrative 1986 fourth quarter expenses largely nullified the dollar gain in gross profits. As a result, net earnings were only mildly better than those of the previous year.

	Quarters Ended			
	March 31	June 30	Sept. 30	Dec. 31
	Thousands of Dollars, Except for Per Share Data			
1986				
Net Sales	$10,393	$10,837	$12,012	$13,980
Gross Profit	3,457	3,484	3,002	4,586
Net Earnings	569	559	281	690
Net earnings per common share	.12	.12	.05	.14
Cash dividends per common share	.0625	—	.0625	—
Stock price range:				
High	11¾	11¾	9⅞	8
Low	9½	8¾	7⅛	6⅝
1985				
Net Sales	$12,162	$14,630	$14,543	$11,658
Gross Profit	3,548	4,552	4,486	3,886
Net Earnings	719	963	891	648
Net earnings per common share	.14	.21	.24	.14
Cash dividends per common share	.0625	—	.0625	—
Stock price range:				
High	9	11¾	10	10⅜
Low	6	7¾	8¼	7¾

ASSETS

December 31,	1986	1985
	(thousands of dollars)	
CURRENT ASSETS:		
Cash and cash equivalents	**$ 482**	$ 341
Trade receivables, less allowance for doubtful accounts of $89,000 in 1986 and $119,000 in 1985 (notes 5 and 6)	**7,695**	7,322
Costs and estimated earnings in excess of billings on uncompleted contracts (note 5)	**232**	757
Inventories (note 6):		
Work in process	**4,091**	3,454
Raw materials and supplies	**7,413**	6,493
	11,504	9,947
Prepaid expenses and other current assets	**216**	137
TOTAL CURRENT ASSETS	**20,129**	18,504
PROPERTY, PLANT AND EQUIPMENT, at cost (note 6):		
Land	**273**	164
Buildings	**3,676**	3,398
Machinery and equipment	**6,110**	5,254
Office furniture and equipment	**4,315**	3,207
Transportation equipment	**1,555**	1,767
Leasehold improvements	**855**	746
	16,784	14,536
Less accumulated depreciation and amortization	**7,011**	5,647
NET PROPERTY, PLANT AND EQUIPMENT	**9,773**	8,889
CONSTRUCTION FUND (note 6)	**—**	242
COST IN EXCESS OF FAIR VALUE OF NET ASSETS OF SUBSIDIARY ACQUIRED	**1,015**	1,204
PATENTS, net of amortization of $447,500 in 1986 and $212,000 in 1985 (notes 4 and 6)	**1,167**	180
OTHER ASSETS (note 4)	**1,961**	1,092
	$ 34,045	$ 30,111

See accompanying notes to consolidated financial statements.

Liabilities and Stockholders' Equity

December 31,	1986	1985
	(thousands of dollars)	
Current Liabilities:		
Note payable to bank (note 6)	**$ 445**	$ —
Current installments of long-term debt (note 6)	**1,624**	1,540
Accounts payable	**2,918**	2,160
Accrued payroll, bonus and employee benefit plan contributions	**1,359**	1,937
Billings in excess of costs and estimated earnings on uncompleted contracts (note 5)	**192**	371
Federal and state income taxes payable	**483**	348
Other accrued liabilities	**1,509**	1,076
Reserve for loss on long-term contracts	**—**	1,110
Total Current Liabilities	**8,530**	8,542
Deferred Income Taxes — noncurrent	**772**	697
Deferred Liability, (note 9)	**480**	230
Long-Term Debt and Capitalized Lease Obligations (note 6)	**13,793**	6,604
Stockholders' Equity (notes 2, 3, 4 and 6):		
Common stock of $ .25 par value; authorized 10,000,000 shares; issued 5,178,845 shares in 1986 and 6,140,375 shares in 1985	**1,295**	1,535
Additional paid-in capital	**11,047**	11,843
Retained earnings	**5,121**	12,828
	17,463	26,206
Less treasury stock at cost, 707,258 shares in 1986 and 1,371,528 shares in 1985	**6,993**	12,168
Total Stockholders' Equity	**10,470**	14,038
Commitments (note 9)		
	$ 34,045	$ 30,111

Consolidated Statements of Earnings

HARMON INDUSTRIES, INC. AND SUBSIDIARIES

(thousands of dollars, except per share amounts)

Years ended December 31,	**1986**	1985	1984
Net sales	**$ 47,223**	$ 52,993	$ 44,445
Cost of sales	**32,693**	36,521	32,669
Gross profit	**14,530**	16,472	11,776
Selling, general and administrative expenses	**9,362**	8,497	6,332
Operating income	**5,168**	7,975	5,444
Other income (expense):			
Interest expense	**(950)**	(1,746)	(768)
Amortization of cost in excess of fair value of net assets of subsidiaries acquired	**(158)**	(140)	(58)
Miscellaneous — net	**78**	41	33
Earnings before income taxes	**4,138**	6,130	4,651
Income tax expense (note 7):			
Current	**1,956**	2,917	2,005
Deferred	**83**	(8)	209
	2,039	2,909	2,214
Net earnings	**$ 2,099**	$ 3,221	$ 2,437
Net earnings per common share (note 4)	**$ .43**	$ .73	$ .51

Consolidated Statements of Stockholders' Equity

(thousands of dollars, except per share amounts)

	Common Stock	Additional Paid-in Capital	Retained Earnings	Treasury Stock	Total Stockholders' Equity
Balance at December 31, 1983	$ 581	$ 4,224	$ 8,120	$ —	$ 12,925
Net earnings	—	—	2,437	—	2,437
Two-for-one stock split	606	(606)	—	—	—
Common stock issued	25	609	—	—	634
Dividends declared ($ .0875 per share)	—	—	(417)	—	(417)
Balance at December 31, 1984	1,212	4,227	10,140	—	15,579
Net earnings	—	—	3,221	—	3,221
Redemption of common stock (note 2)	—	—	—	(21,971)	(21,971)
Common stock issued (notes 2 and 6):					
Private placement	323	9,306	—	—	9,629
Public offering	—	(1,690)	—	9,803	8,113
Dividends declared ($ .125 per share)	—	—	(533)	—	(533)
Balance at December 31, 1985	1,535	11,843	12,828	(12,168)	14,038
Net earnings	—	—	2,099	—	2,099
Retirement of treasury stock	(343)	(2,641)	(9,184)	12,168	—
Common stock issued (note 4)	103	2,603	—	—	2,706
Redemption of common stock (note 3)	—	(758)	—	(6,993)	(7,751)
Dividends declared ($ .125 per share)	—	—	(622)	—	(622)
Balance at December 31, 1986	$ 1,295	$ 11,047	$ 5,121	$ (6,993)	$ 10,470

See accompanying notes to consolidated financial statements.

Consolidated Statements of Changes in Financial Position

(thousands of dollars)

Years ended December 31,	1986	1985	1984
SOURCES OF WORKING CAPITAL:			
Net earnings	**$ 2,099**	$ 3,221	$ 2,437
Items which do not use (provide) funds:			
Depreciation and amortization	**2,074**	1,775	1,353
Deferred income tax expense (benefit)	**75**	(8)	184
Working capital provided by operations	**4,248**	4,988	3,974
Decrease in construction fund	**242**	828	—
Retirement of property, plant and equipment	**129**	80	13
Proceeds from long-term debt	**12,767**	24,536	5,993
Issuance of common stock	**2,706**	17,742	634
Increase in deferred liability	**250**	115	115
Decrease in working capital	**—**	2,408	—
	$ 20,342	$ 50,697	$ 10,729
USES OF WORKING CAPITAL			
Additions to property, plant and equipment	**$ 2,212**	$ 2,919	$ 1,467
Acquisitions of patents	**1,251**	—	—
Increase in construction fund	**—**	—	1,070
Acquisition of net assets of subsidiaries, excluding working capital acquired	**557**	—	2,485
Current installments and retirement of long- term debt	**5,579**	24,684	3,272
Redemption of common stock	**7,751**	21,971	—
Dividends declared	**622**	533	417
Increase in working capital	**1,639**	—	1,860
Other	**731**	590	158
	$ 20,342	$ 50,697	$ 10,729
CHANGES IN COMPONENTS OF WORKING CAPITAL:			
Increase (decrease) in current assets:			
Cash and cash equivalents	**$ 100**	$ (9)	$ (385)
Trade receivables	**(1,061)**	(316)	1,324
Overpayment of estimated Federal and state income taxes	**—**	—	(214)
Costs and estimated earnings in excess of billings on uncompleted contracts	**(525)**	(116)	562
Inventories	**(738)**	(919)	1,159
Prepaid expenses and other current assets	**(41)**	18	(6)
	(2,265)	(1,342)	2,440
Increase (decease) in current liabilities:			
Note payable to bank	**(70)**	(150)	(1,300)
Current installments of long-term debt	**56**	219	1,001
Accounts payable	**(132)**	(413)	970
Accrued payroll, bonus and employee benefit plan contributions	**(641)**	32	1,216
Billings in excess of costs and estimated earnings on uncompleted contracts	**(179)**	292	16
Federal and state income taxes payable	**132**	16	(135)
Other accrued liabilities	**189**	21	29
Reserve for loss on long-term contracts	**(1,110)**	1,049	(68)
	(1,755)	1,066	1,729
Working capital of subsidiaries acquired	**2,149**	—	1,149
Increase (decrease) in working capital	**$ 1,639**	$ (2,408)	$ 1,860

See accompanying notes to consolidated financial statements.

1. Summary of Significant Accounting Policies

Principles of Consolidation
The consolidated financial statements of the Company include the accounts of Harmon Industries, Inc. and its wholly-owned subsidiaries, Electro Pneumatic Corporation (EPC), Harmon Electronics, Inc. (HEI), and Modern Industries, Inc. (Modern). Significant intercompany accounts and transactions have been eliminated in consolidation.

Nature of Business
The Company principally serves the railroad industry. It is engaged in the design, production and distribution of railroad crossing warning systems, train traffic control systems and radio communication equipment.

Inventory Valuation
Inventories are valued primarily at the lower of cost (first-in, first-out) or market (net realizable value). The components of cost are labor, materials and an allocation of manufacturing overhead.

Certain inventories acquired as a result of the Modern acquisition (see note 4) are valued at the lower of cost (last-in, first-out) or market, which approximates cost on a first-in, first-out basis at December 31, 1986.

Property, Plant and Equipment
Buildings, machinery and equipment, office furniture and equipment, transportation equipment and leasehold improvements are being depreciated or amortized using the straight-line method over the estimated useful lives of the assets, which range from two to thirty-three years.

Maintenance and repairs are charged to operations as incurred. Renewals and betterments are capitalized as additions to the approporiate asset accounts. Upon sale or retirement of assets, the cost and related accumulated depreciation applicable to such assets are removed from the accounts, and any resulting gain or loss is reflected in operations.

Income Taxes
Deferred income taxes are the result of timing differences in recognizing some items of expense for financial reporting purposes in periods which differ from the recognization for income tax purposes.

Investment tax credits in 1985 and 1984 were accounted for as a reduction of the provision for income taxes in the year the related asset was placed in service.

Long-term Contracts
Profits on long-term contracts are recorded on the basis of the Company's estimates of the percentage of completion of individual contracts. That portion of the total contract price is accrued which is allocable, on the basis of the Company's engineering estimates of the percentage of completion, to contract expenditures incurred. Profits are not recorded during the start-up phase of the contract, which has been determined by the Company to approximate the initial 15% of design and construction. All losses are recognized in the period during which they become evident.

Cost in Excess of Fair Value of Net Assets Acquired
Cost in excess of the fair value of net assets acquired is amortized on a straight-line basis over ten years.

Interest Capitalization
In accordance with Financial Accounting Standards Board Statement No. 34 "Capitalization of Interest Costs", the Company has adopted the policy of capitalizing interest costs on funds borrowed to finance the construction of major facilities. Interest expense of $54,000 was capitalized during the year ended December 31, 1985.

Patents
The cost of patents acquired is being amortized on a straight-line basis over the estimated remaining economic lives of the respective patents, which is less than the statutory life of each patent.

Research and Development
Costs incurred in the creation and start-up of new products or in changing existing products are charged to expense as incurred. Such costs amounted to approximately $2,360,000, $2,095,000 and $2,020,000 for the years ended December 31, 1986, 1985 and 1984, respectively.

Earnings per Common Share
Earnings per common share are based on the weighted average number of common shares outstanding. Per share computations have been retroactively restated to reflect a two-for-one stock split-up effected in the form of a dividend distributed November 15, 1984 to stockholders of record on October 31, 1984.

2. SAB NIFE AB Redemption

On June 18, 1985, the Company purchased all of the 2,476,528 outstanding shares of the Company's common stock which were held by SAB NIFE AB (Nife) (representing 51.1% of the shares outstanding) at a price of $8.82 per share (total purchase price of $22,937,000 including fees). The purchase price and related fees were financed through various new indebtedness, the establishment and issuance of stock to an empoyee stock ownership plan and trust (ESOT) and the issuance of stock to a private investor. In conjunction with this transaction, the Company's existing financing, consisting of notes payable to bank under the revolving and term loan agreements, was refinanced (see note 6).

2. SAB NIFE AB Redemption, continued
Fees relating to the redemption have been capitalized and classified according to the components and activities to which they were related. These fees have been classified as follows: prepaid expense and other assets for fees relating to short-term and long term indebtedness, ($406,000 and $349,000 respectively); a reduction of additional paid-in capital for fees relating to common stock issuance ($211,000); and, a cost of treasury stock for fees relating to the redemption of common stock held by Nife ($128,000).

On June 18, 1985, the ESOT purchased 258,065 shares of common stock at a price of $7.75 per share (total purchase price of $2,000,000). Transferability of such shares is restricted.

On June 18, 1985, the Company sold 1,032,258 shares of common stock to a private investor at a price of $7.595 per share (total purchase price of $7,840,000). The stock was restricted as to transferability and callable by the Company at a redemption price ranging from approximately $7.95 to $11.16 per share during the period from June 18, 1985 through June 17, 1987. On June 18, 1987, if the stock had not been called, the Company was contingently obligated to pay in cash the amount, if any, by which 90% of the market price of the common stock was less than $11.16 per share, or at its option to issue 20% convertible preferred stock with an aggregate par value equal to 110% of the required cash payment (see note 3).

3. Equity Transactions
During 1986, the Company exercised its right to call certain restricted shares owned by a private investor (see note 2). On May 16, 1986, the Company's ESOT purchased 75,000 shares of this stock for $9.54 a share or $715,500. Also, on November 16, 1986, the Company purchased 707,258 shares of this stock for $9.88 a share or $6,993,013 and paid $721,875 on the remaining 250,000 shares owned by the investor in order to cancel and terminate certain rights with respect to such shares.

4. Acquisitions
As of July 31, 1986, the Company acquired Modern Industries, Inc. (Modern), a Kentucky corporation manufacturing railroad safety equipment and providing design and installation services to the railroad industry.

All of Modern's stock was exchanged for 409,998 shares of previously unissued common stock of the Company, with a fair market value of $2,706,000. The fair market value of the Company's common stock issued was determined by independent valuation. This business combination was accounted for as a purchase.

The purchase price was allocated to the net assets acquired in relation to their fair values. The allocation of purchase price and summarized pro forma financial information is presented below (thousands of dollars except per share data):

Allocation of purchase price

Current assets	$ 3,891
Current liabilities	1,742
Working capital acquired	2,149
Property, plant and equipment	557
Total purchase price	$ 2,706

Pro forma consolidated financial information

	Year ended December 31, 1986		
	Historical	Pro forma Adjustment	Pro forma Consolidated
	(Thousands of dollars)		
Net sales	$ 47,223	$ 7,498	$ 54,721
Net earnings	2,099	138	2,237
Earnings per share	$ .43	$ —	$ .46

	Year ended December 31, 1985		
	Historical	Pro forma Adjustment	Pro forma Consolidated
	(Thousands of dollars)		
Net sales	$ 52,993	$ 13,790	$ 66,783
Net earnings	3,221	319	3,540
Earnings per share	$ .73	$ —	$ .73

The results of operations of Modern since the date of acquisition have been included in the Company's consolidated statements of earnings for the year ended December 31, 1986.

On February 7, 1986, the Company purchased for $1,500,000 certain patents, machinery, equipment and inventory relating to railroad fuel management and train data systems.

As of July 15, 1986, the Company purchased for $600,000, 22.7% of the common stock of Phoenix Data, Inc., a manufacturer of analog to digital conversion devices for the aerospace and defense industries. The Company, as part of this acquisition, has an obligation to acquire the remaining shares of common stock as of January 1, 1989, if certain requirements are met by Phoenix Data, Inc. The investment in Phoenix Data, Inc., which is accounted for on the equity method, is included in other assets in the accompanying consolidated balance sheet at December 31, 1986.

5. Contracts in Progress

	Costs and estimated earnings in excess of billings	Billings in excess of costs and estimated earnings	Total
	(Thousands of dollars)		
December 31, 1986:			
Costs and estimated earnings	$ 2,347	$ 2,993	$ 5,340
Billings	2,115	3,185	5,300
	$ 232	$ (192)	$ 40
December 31, 1985:			
Costs and estimated earnings	$ 2,878	$ 7,632	$ 10,510
Billings	2,121	8,003	10,124
	$ 757	$ (371)	$ 386

All receivables on contracts in progress are considered to be collectible within twelve months.

6. Indebtedness

	December 31, 1986	1985
	(Thousands of dollars)	
Short term debt:		
Note payable to bank under lines of credit	**$ 445**	$ —
Long term debt and capitalized lease obligations:		
Note payable to bank under working capital loan	**$ 5,515**	$ 300
Note payable to bank under fixed asset loan	**4,643**	4,629
9% Subordinated convertible debentures	**2,100**	—
Industrial revenue bonds	**1,847**	2,134
Capitalized lease obligations	**525**	345
Secured notes payable	**732**	667
Unsecured note payable	**55**	69
Total long-term debt and capitalized lease obligations	**15,417**	8,144
Less current installments of long-term debt and capitalized lease obligations	**1,624**	1,540
Long-term debt and capitalized lease obligations, excluding current installments	**$13,793**	$ 6,604

As of June 18, 1985, the Company entered into a secured credit agreement under which the Company borrowed sufficient funds to allow for the redemption of the shares of common stock held by Nife (see note 2) and the refinancing of certain prior bank loans. These loans are secured by liens against the Company's inventories, receivables, contract rights, and other tangible and intangible properties, both real and personal. During November 1985, a public offering of common stock was completed and the net proceeds were used to repay a portion of these loans.

The working capital loan is a 30-day demand note, which comes due on June 17, 1988, unless prior demand is made, and bears interest at a base rate established by the bank plus 1% (8.5% at December 31, 1986). The bank has waived the right to demand payment until January 15, 1988, unless an event of default occurs and, accordingly, the working capital loan has been classified as long term debt. The amount available under the working capital loan is limited to the sum of 85% of eligible accounts receivable and 60% of eligible inventory, but in no event more than $13,000,000. The Company had unused working capital loan availability under this agreement of $3,285,000 at December 31, 1986.

The fixed asset loan bears interest at a base rate established by the bank plus 1% (8.5% at December 31, 1986) with monthly payments of $113,000, including interest, through June 1, 1992. The bank has the right to convert the fixed asset loan to a 30-day demand note after July 1, 1988.

On December 31, 1986, the Company issued 9% subordinated convertible debentures (without sinking fund) in the amount of $2,100,000 and due December 31, 1996. Interest payments are due at the end of each calendar quarter.

The debentures can be converted into the Company's common stock at a price of $9.25 per share, subject to adjustments, if any, for stock dividends or split-ups. The debentures are also callable by the Company at 109% of par value at December 31, 1987 decreasing one per cent per annum through December 31, 1996, provided that prior to January 1, 1990 the debentures are not callable, unless the bid price of the Company's common stock for any 20 trading days within a consecutive period of 30 trading days ending not more than five trading days prior to the date of notice of redemption is at least 150% of the conversion price, as adjusted.

The debenture agreement includes a covenant that would prevent the Company from paying cash dividends on its common stock for the period commencing at the end of the third consecutive quarter in which the Company has

6. Indebtedness, continued

experienced net losses and continuing until the Company has achieved three consecutive quarters of net earnings or until subsequent cumulative net earnings has exceeded the cumulative quarterly losses, whichever period is shorter.

Two series of industrial revenue bonds were issued to provide funds to construct and equip manufacturing and research and development facilities. One series of bonds, bearing interest at 73% of the prevailing prime commercial rate, not less than 7.5% (7.5% at December 31, 1986 and 1985), comes due in annual installments of $140,000 plus interest through 1995. The second series of bonds, which provides for the lease of the facilities to the Company by the issuers, bears interest at 10% and comes due in annual installments of $150,000 plus interest, through 1990. The lease contains a bargain purchase option which management intends to exercise and, accordingly, the lease has been accounted for as a purchase. The bonds are secured by buildings and equipment with a depreciated cost of $3,446,000, and land with a cost of $164,000 at December 31, 1986.

The portion of the bond proceeds which had not been disbursed for construction at December 31, 1986 and 1985 or which was not required to reduce current accounts payable related to construction of the facilities, was classified as a noncurrent asset as such was not available for working capital purposes.

The various indebtedness agreements contain, among other things, covenants relating to: restrictions on expenditures or commitments for fixed assets in excess of the greater of $2,500,000 per year or 65% of net earnings less dividends paid plus depreciation; maintenance of a positive net worth; maintenance of a minimum working capital of $3,000,000; maintenance of a minimum ratio of debt to equity (subsequent to the repayment of the acquisition loan) ranging from 2.5-1 to 1.5-1 during the period 1985 through 1990; and, a limitation on the payment of dividends to 50 percent of net earnings. The Company was in compliance with all such covenants at December 31, 1986.

The capitalized lease obligations have implicit interest rates ranging from approximately 8.9% to 10.50%, and are due in monthly installments, including interest, of $4,421 through 1989 and $104,060 through 1991. They are secured by related office equipment with a depreciated cost of $615,000 at December 31, 1986.

The Company's secured notes payable bear interest at prime, prime plus .75% and 9.15% and are due in monthly principal and interest installments of $3,356 and monthly installments of $16,258 plus interest from March 1989 through November 1991. The notes are secured by various equipment with a depreciated cost of $838,000 at December 31, 1986.

The Company's unsecured note payable bears interest at 8% and is due in monthly installments of $1,638, including interest, through March 1990.

At December 31, 1986, long-term debt maturities and future minimum principal payments under capitalized lease obligations for 1987 through 1991 are:

Year Ended December 31	Thousands of Dollars
1987	$1,624
1988	7,285
1989	1,824
1990	1,799
1991	224

Modern has working capital and equipment lines of credit with a bank totaling $1,000,000 which are collateralized by inventories and equipment and accrue interest at the prime rate (7.5% at December 31, 1986). Borrowings on the lines of credit at December 31, 1986 amounted to $445,000.

On December 29, 1986, the Company was extended a $2,000,000 line of credit with outstanding borrowings accruing interest at a base rate established by the bank plus 1% (8.5% at December 31, 1986). This line of credit is secured by 480,231 shares of treasury stock. There were no outstanding borrowings at December 31, 1986.

7. Income Taxes

Income tax expense (benefit) consisted of the following components for the years ended December 31, 1986, 1985 and 1984:

	Years ended December 31,		
	1986	1985	1984
	(Thousands of dollars)		
Current:			
Federal	**$1,815**	$2,741	$1,891
State	**141**	176	114
Total current	**1,956**	2,917	2,005
Deferred:			
Federal	**75**	(7)	199
State	**8**	(1)	10
Total deferred	**83**	(8)	209
Total income tax expense	**$2,039**	$2,909	$2,214

7. Income Taxes, continued

Income tax expense for the years ended December 31, 1986, 1985 and 1984 resulted in effective tax rates of 49.3%, 47.5% and 47.6%, respectively. Effective rates differ from the statutory Federal income tax rate of 46% because of the following:

	Years ended December 31,					
	1986		1985		1984	
	Amount	Percent	Amount	Percent	Amount	Percent
	(Thousands of dollars)					
"Expected" tax expense at statutory rate	**$ 1,903**	**46.0%**	$ 2,820	46.0%	$ 2,139	46.0%
Investment tax credit	**—**	**—**	(59)	(1.0)	(96)	(2.1)
State taxes, net of Federal income tax benefit	**80**	**1.9**	98	1.6	67	1.5
Amortization of cost in excess of acquired net assets	**63**	**1.5**	65	1.1	27	.6
Other	**(7)**	**(.1)**	(15)	(.2)	77	1.6
	$ 2,039	**49.3%**	$ 2,909	47.5%	$ 2,214	47.6%

Deferred income tax expense (benefit) for the years ended December 31, 1986, 1985 and 1984 consisted of the following:

	Years ended December 31,		
	1986	1985	1984
	(Thousands of dollars)		
Deferred taxes on timing differences:			
Depreciation	**$ 205**	$ 162	$ 175
Other	**(122)**	(170)	34
	$ 83	$ (8)	$ 209

8. Business Segment Information

The Company and its subsidiaries operate in one reportable segment, as defined under Financial Accounting Standards Board Statement No. 14, "Financial Accounting for Segments of a Business Enterprise." That segment consists of various products sold primarily to the railroad industry.

Three customers accounted for approximately $7,358,000, $6,105,000 and $5,546,000 of net sales during the year ended December 31, 1986. Three customers accounted for approximately $8,644,000, $7,643,000 and $7,153,000 of net sales during the year ended December 31, 1985. Three customers accounted for approximately $7,845,000, $6,472,000 and $6,403,000 of net sales during the year ended December 31, 1984.

9. Commitments and Deferred Liability

Leases

The Company has entered into various lease arrangements covering the use of certain manufacturing facilites, sales offices and equipment, all of which are treated as operating leases. Rental expense related to these leases amounted to $906,000, $797,000 and $546,000 for the years ended December 31, 1986, 1985 and 1984 respectively. Included in rental expense is expense relating to the lease of administrative office space from a director of the Company at a monthly rate ranging from $900 to $1,200 during the period 1984 through 1986. This lease expires on December 31, 1989.

A summary of noncancellable long-term lease commitments follows:

Years ended December 31,	Asset leased		Total Commitments
	Equipment	Real property	
	(Thousands of dollars)		
1987	$162	$435	$597
1988	157	439	596
1989	145	302	447
1990	82	159	241
1991	12	—	12
1992-2001	—	—	—

It is expected that in the normal course of business, leases that expire will be renewed or replaced by leases on other properties; thus, it is anticipated that future minimum lease commitments will not be less than the amounts shown for 1987.

9. Commitments and Deferred Liability, continued

Employee Benefits

Prior to June 17, 1985, Harmon Industries, Inc had a contributory profit sharing plan for all employees who were at least 18 years of age and who had completed six months employment, consisting of at least 1,000 hours service. On June 17, 1985, this plan was amended and converted into an employee stock ownership plan and trust (ESOT). Employer contributions to the ESOT are based on a percentage of pretax earnings. The ESOT has purchased certain Common Stock of the Company (see notes 2 and 3).

Amounts charged to operating expense were $763,000, $713,000, and $380,000 for the years ended December 31, 1986, 1985 and 1984, respectively.

Modern has established a Simplified Employee Pension (SEP) plan for substantially all employees. Under this plan, Modern makes discretionary contributions to the Individual Retirement Accounts of employees who meet certain requirements as to service and age. Calculations are based upon 15% of pretax earnings. Amounts charged to expense for the period from date of acquisition to December 31, 1986 were $8,100.

The Company also has an executive bonus plan the contributions of which are based on a percentage of pretax earnings after employee profit sharing (ESOT) contributions. Accruals made under this plan were $238,000 $361,000 and $276,000 for the years ended December 31, 1986, 1985 and 1984, respectively.

The Company has a nonqualified, unfunded deferred compensation plan for certain key executives providing for certain payments upon retirement, death or disability. The plan provides for payments for eight years equal to the average salary for the final three years of service. The plan provides for reduced benefits upon early retirement, disability or termination of employment. The deferred compensation expense was $250,000, $115,000 and $115,000 for the years ended December 1986, 1985 and 1984, respectively.

Auditors' Report

The Board of Directors and Stockholders
Harmon Industries, Inc. and Subsidiaries:

We have examined the consolidated balance sheets of Harmon Industries, Inc. (formerly SAB Harmon Industries, Inc.) and Subsidiaries as of December 31, 1986 and 1985 and the related consolidated statements of earnings, stockholders' equity and changes in financial position for each of the years in the three year period ended December 31, 1986. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned financial statements present fairly the consolidated financial position of Harmon Industries, Inc. and Subsidiaries at December 31, 1986 and 1985 and the results of their operations and the changes in their financial position for each of the years in the three year period ended December 31, 1986 in conformity with generally accepted accounting principles applied on a consistent basis.

Peat, Marwick, Mitchell & Co.

Kansas City, Missouri
February 6, 1987

Transfer Agent
United Missouri Bank of Kansas City, N.A.
10th & Grand
P.O. Box 410064
Kansas City, Missouri 64141-0064
☎ 816–556-7445

For change of address, lost dividends, or lost stock certificates, write or call the above and address your inquiry to: Securities Transfer Division.

Analyst Contact
Security analyst inquiries are welcomed. Please call Mr. Vincent D. Burget,
Vice President–Corporate Affairs, at
☎ 816–229-3345.

Stock Trading
The Company's common stock is traded in the over-the-counter market, and it is quoted on the NASDAQ National Market System under the symbol HRMN. Stock price quotations can be found in major daily newspapers and in the *The Wall Street Journal.*

At March 2, 1987, the following securities firms were making a dual auction market in the Company's common stock:

George K. Baum & Company

Lowell H. Listrom & Co.

Dean Witter Reynolds Inc.

Kidder, Peabody & Co. Incorporated

Merrill Lynch Pierce Fenner & Smith Inc.

Shearson American Express

Annual Meeting
The Company's annual meeting of stockholders will be held at 2:00 p.m., Tuesday, May 5, 1987, at the Country Club of Blue Springs, Blue Springs, Missouri. All shareholders and any other interested parties are cordially invited to attend.

The meeting notice and proxy materials were mailed to each shareholder with a copy of this annual report. For those shareholders unable to attend the meeting, we urge them to vote their proxies and thus participate in the decisions that will be made at the annual meeting.

Common Stock and Dividend Information
At December 31, 1986, there were 4,471,587 shares outstanding and approximately 750 shareholders of record of Harmon's common stock. Cash dividends are traditionally paid in April and October to shareholders of record approximately two weeks prior. Stock dividends are paid irregularly and at the discretion of the Board of Directors.

The following table sets forth for the periods indicated the cash dividends paid per share of common stock and the high and low bid prices in each of the quarters in the past two years ended December 31, 1986. Price per share and cash dividends have been adjusted for all stock splits and stock dividends.

	Dividends	Price Range	
	Per Share	High	Low
Fiscal 1986			
1st quarter ended March	$ .06¼	11¾	9½
2nd quarter ended June	—	11¾	8¾
3rd quarter ended September	$ .06¼	9⅞	7⅛
4th quarter ended December	—	8	6⅝
	$ .12½		
Fiscal 1985			
1st quarter ended March	$ .06¼	9	6
2nd quarter ended June	—	11¾	7¾
3rd quarter ended September	$ .06¼	10	8¼
4th quarter ended December	—	10⅜	7¾
	$ .12½		

Form 10-K
A copy of the Form 10-K, the Company's annual report that is filed with the Securities and Exchange Commission, will be sent free to any shareholder upon written request.

Write to: Mr. Vincent D. Burget,
Vice President–Corporate Affairs
Harmon Industries, Inc.
P.O. Box 1570
Blue Springs, Missouri 64015

Officers

Harmon Industries, Inc.
Robert E. Harmon
President, Chairman of the Board of Directors

Charles M. Foudree
Executive Vice President–Finance, Treasurer and Secretary

Ronald G. Breshears
Vice President–Human Resources

Vincent D. Burget
Vice President–Corporate Affairs

Robert G. Clawson
Vice President–Sales & Marketing

Robert E. Heggestad
Vice President–Technology

Stephen L. Schmitz
Vice President–Controller

Harmon Electronics, Inc.
Robert E. Harmon
Chairman of the Board of Directors

James P. Lemieux, President

Don A. Gilmore
Controller and Secretary

J. Randall John
Vice President–Manufacturing

James R. Meyer
Vice President–MIS

Electro Pneumatic Corporation
Robert E. Harmon
Chairman of the Board of Directors

Richard E. Risely, President

Edmund G. Acrey, Vice President, Secretary/Treasurer

Bert Wright
Vice President–Operations

Modern Industries, Inc.
Robert E. Harmon
Chairman of the Board of Directors

Charles R. Tucker, President

Charles M. Foudree, Secretary

Stephen L. Schmitz, Treasurer

Directors

Robert E. Harmon
Chairman of the Board, President
Harmon Industries, Inc.

Densil Allen, retired
Former Vice President
Unitog Company
Industrial Uniform Manufacturer

Charles M. Foudree
Executive Vice President–Finance, Treasurer, Secretary
Harmon Industries, Inc.

Robert C. Harmon, retired
Harmon Industries, Inc.
Founder of the Company

Herbert M. Kohn
Attorney-at-Law
Linde Thomson Fairchild Langworthy Kohn and VanDyke, P.C.

Björn Olsson
President
SAB NIFE AB
Malmö, Sweden

Donald V. Rentz
President
Morton Cabinet Company, Inc.
Webb City, Missouri

L. Ralph Thomas, retired
Former General Superintendent
Communications & Signal Division
Atchison, Topeka & Santa Fe Railway Company

Miscellany

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Operating Facilities

Harmon Electronics, Inc.
Grain Valley, Missouri (3)
Warrensburg, Missouri (2)

Electro Pneumatic Corporation
Riverside, California

Modern Industries, Inc.
Louisville, Kentucky
Jacksonville, Florida

Associates
Vale-Harmon Enterprises, Ltd.
Dorval, Quebec, Canada
Scarborough, Ontario, Canada

Henkes-Harmon Industries, Pty. Ltd.
Mooroolbark, Victoria, Australia

General Counsel
Linde Thomson Fairchild Langworthy Kohn & Van Dyke, P.C.
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Auditors
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Kansas City, Missouri 64199

DESIGN, PHOTOGRAPHY AND PRINTING: ANNUAL REPORTS, INC., FRANKLIN, INDIANA

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HARMON INDUSTRIES, INC.

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Blue Springs, Missouri 64015

PROXY STATEMENT

FOR THE ANNUAL MEETING OF SHAREHOLDERS TO BE HELD MAY 5, 1987

SOLICITATION OF PROXIES

This Proxy Statement and the accompanying form of proxy are being mailed to shareholders of Harmon Industries, Inc. (the "Company") commencing on March 25, 1987. The enclosed proxy is solicited by and on behalf of the Board of Directors of the Company to be used at the Annual Meeting of Shareholders, to be held at the Country Club of Blue Springs, 1600 N. Circle Drive, Blue Springs, Missouri, on May 5, 1987 at 2:00 o'clock p.m. and at any adjournments thereof, for the purposes set forth in the accompanying Notice of Annual Meeting of Shareholders. Any shareholder who executes and returns the enclosed proxy has the right to revoke it, in writing, at any time before it is voted at the meeting.

The Company will bear the cost of solicitation of proxies. In addition to the use of the mails, proxies may be solicited personally or by telephone or telegraph by the directors or by a few regular executives or employees of the Company at a nominal cost, and the Company may reimburse brokers and other persons holding stock in their names or in the names of their nominees for their expenses in sending proxy material to principals.

The Board of Directors of the Company has fixed the close of business on March 20, 1987, as the record date for the determination of shareholders entitled to notice of and to vote at the meeting. As of that date, the Company had 4,471,587 shares of Common Stock outstanding and entitled to vote at the meeting.

Each share of Common Stock entitles the shareholders to one vote for each share held. Shareholders have the right to accumulate votes in the election of directors, that is, to cast a total number of votes for one or more nominees for directors equal to the number of shares held times the number of directors to be elected. The shareholder may cast his or her votes for one nominee or distribute his or her votes among two or more nominees.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth the number of shares of Common Stock of the Company owned beneficially as of March 20, 1987, by each person who, as of that date, to the best knowledge of management, was the beneficial owner of more than 5% of the outstanding shares. Common Stock is the only class of voting securities.

Title of Class	Name and Address of Beneficial Owner	Beneficial Ownership(1)	Percent of Class
Common Stock	Robert C. and Mildred I. Harmon Route 2, Box 152 Grain Valley, Missouri 64029	334,836(3)	7.5%
Common Stock	The Southgate Bank, as Trustee for the Company's ESOT P.O. Box 1570 Blue Springs, Missouri 64015	333,065	7.4%
Common Stock	K.D.F., a Kansas general partnership P.O. Box 5049 Topeka, Kansas 66605	250,000(2)	5.6%
Common Stock	Beneficial ownership of all officers and directors as a group (16 in group)	680,544	15.2%

(1) All amounts of shares reflect sole voting and disposition power unless otherwise indicated.

(2) K.D.F. is the nominee for a public employees' pension plan, which acquired these shares for investment purposes. Reimer and Koger Associates, Inc., a registered investment adviser, acts as the agent for the pension plan and has the sole power to vote and dispose of these shares, subject to investment policy and guidelines established by the statutes creating the pension plan and its board of trustees. Reimer and Koger Associates, Inc. is not affiliated with the Company or K.D.F.

(3) Shares are beneficially owned and held of record by Robert C. Harmon and Mildred I. Harmon, as joint trustee for the Mildred I. Harmon Trust holding 182,848 shares and the Robert C. Harmon Trust holding 150,988 shares, with shared voting and disposition power.

ELECTION OF DIRECTORS

Eight directors are to be elected at the Annual Meeting of Shareholders for one year or until their successors are elected and qualified. It is the intention of the persons named in the accompanying form of proxy to vote for the election of the nominees listed below. If, for any reason, any of the nominees is unable or declines to serve, the proxies will be voted for the other persons listed and for substitute nominees nominated by management. During fiscal 1986, the Board of Directors held five (5) meetings. None of the directors, nominated for re-election herein attended fewer than 75% of the meetings for which they were eligible to serve. During 1986, the Company did not have a Nominating Committee. The Audit Committee consists of Densil Allen, Herbert M. Kohn and Donald V. Rentz. Management does not anticipate that any of the nominees will be unable or decline to serve.

Name of Nominee	Age	Principal Occupation for Last Five Years	Served Continuously as a Director Since	Stock Owned Beneficially
Densil Allen	66	Retired Vice President of Unitog Company, an industrial uniform manufacturer.	7/27/72	600
Charles M. Foudree	42	Executive Vice President of the Company since 9/9/86. Treasurer of the Company since 2/5/74. Secretary of the Company since 2/2/82.	7/27/72	4,600
Robert C. Harmon	74	Consultant to the Company, Chairman of the Board of the Company from 11/17/69 to 2/4/75; for more than five years prior to that, President of the Company.	10/2/61	333,836(1)
Robert E. Harmon	47	Chairman of the Board of the Company since 2/4/75. President of the Company since 11/17/69.	10/2/61	222,425(2)
Herbert M. Kohn	48	Since January, 1986, Chairman of the Board of Linde Thomson Fairchild Langworthy Kohn & VanDyke, P.C., legal counsel for the Company. For more than five years prior to that, an attorney with the same firm.	9/1/85	10,000
Bjoern Olsson	41	President of SAB NIFE AB, a subsidiary of Investment AB Cardo, since 10/1/82; prior to that Vice President of Administration of Wilh. Sonesson AB from 5/15/81; prior to that Vice President of Finance and Administration for Linden Alimak AB since 8/15/76.	5/6/86(3)	0
Donald V. Rentz	48	President of Morton Cabinet Company, Inc. since 1984; prior to that, 1980-1984, President of Solna, Inc. a printing press manufacturer; Vice President of Harmon Industries, Inc. from 6/1/69 to 11/12/80.	9/9/70	2,500
L. Ralph Thomas	75	Retired on 7/1/76; for more than 47 years prior to that, employed by The Atchison, Topeka & Santa Fe Railway Company serving as General Superintendent-Communications and Signals from 1965 to retirement.	2/6/79	0(4)

(1) Shares are beneficially owned and held of record by Robert C. Harmon and Mildred I. Harmon, as joint trustee for the Mildred I. Harmon Trust holding 182,848 shares and the Robert C. Harmon Trust holding 150,988 shares, with shared voting and disposition power.

(2) Includes 198,905 shares held directly by Robert E. Harmon and 23,520 shares beneficially held for Robert Edward Harmon, his son. Does not include 2,200 shares owned by Debra A. Harmon, his wife, for which Robert E. Harmon disclaims beneficial ownership.

(3) Mr. Olsson has previously served as a director of the Company from 2/2/82 until 5/31/85, at which time he resigned in anticipation of the redemption of all shares held by SAB NIFE AB on 6/17/85. He was re-elected on 5/6/86.

(4) 1,000 shares are owned by Lois Thomas, his wife, for which L. Ralph Thomas disclaims beneficial ownership.

All amounts of shares reflect sole voting and disposition power unless otherwise indicated.

Robert C. Harmon, a director and consultant to the Company, is the father of Robert E. Harmon, Chairman of the Board, President and Director.

Mr. Kohn is also a director of Synergistic Communications Group, Inc. and Stars To Go, Inc., publicly-held companies. None of the other above-listed directors serves as a director of any other company with a class of stock registered pursuant to Section 12 of the Securities Exchange Act of 1934 or subject to the requirements of Section 15(d) of that Act or any company registered under the Investment Company Act of 1940.

Mr. Kohn and Mr. Robert E. Harmon serve as directors of the Merchants Bank, Kansas City, Missouri, which is the Company's primary lender.

EXECUTIVE COMPENSATION

The following table shows the aggregate remuneration paid or set aside by the Company during the fiscal year ended December 31, 1986 to officers of the Company.

Cash Compensation Table

Name of Individual or Number in Group	Capacities in Which Served	Cash Compensation
Robert G. Clawson	Officer	$ 124,208
Charles M. Foudree	Officer-Director	113,188
Robert E. Harmon	Officer-Director	135,528
Robert E. Heggestad	Officer	98,021
James P. Lemieux	Officer	104,708
Officers and key employees as a group (10 persons)		1,002,292

During 1986, Messrs. Harmon, Clawson, Foudree, Lemieux, Heggestad and Breshears had employment contracts with the Company, which provided for an annual cash bonus based on pre-tax net profits. These contracts terminated September 30, 1986. Bonuses for these officers plus Messrs. Meyer and Schmitz under the pre-tax bonus plan for 1986, were paid in the aggregate amount of $237,900 and were included in the amounts shown in the above table. The Board of Directors has authorized employment contracts for the ten officers and key employees shown in the above table, including the five named officers. These contracts are in the process of negotiation but will include higher annual salaries for the officers, with a corresponding reduction in the pre-tax bonus. In addition, in future years, a portion of the bonus pool will be paid in the form of the Company's Common Stock.

Richard E. Risely, President of Electro Pneumatic Corporation ("EPC"), one of the Company's wholly-owned subsidiaries has an employment contract, under which he is employed on a full-time basis until July 31, 1989 and on a part-time consulting basis for two years thereafter, at an annual salary of $100,000.

The five members of the Board of Directors who are not employees of the Company each receive $4,000 per year plus $250 for each Board or separate committee meeting attended as compensation for their services as Board or committee members. The two directors who are employees of the Company receive $1,500 per year plus $250 for each Board or separate committee meeting attended as compensation for their services as Board or committee members. A portion of the travel expenses to and from the meetings are also paid by the Company.

The Company reimburses the officers for the business use of their personal cars. The reimbursement is based upon a combination of the business miles driven and the time the car is available for business use. This reimbursement is not included in the table above.

Employee Benefit Plans

During 1984, the Company established a non-qualified, unfunded, deferred compensation plan for certain officers and key employees, providing for payments upon retirement, death or disability. Under the plan, eight annual retirement payments will be made, each equal to the average annual base salary of the consecutive three year period that produces the highest average. The plan provides for reduced benefits upon early retirement, disability or termination of employment. The value of the deferred compensation expense for 1986 was approximately $250,000 and has not been included in the compensation table.

On June 17, 1985, the Company modified its contributory profit-sharing plan to become an Employee Stock Ownership Plan and Trust ("ESOT"), thereby allowing investments in Common Stock of the Company. Officers and full-time employees of the Company (excluding the employees of its wholly-owned subsidiary, Modern Industries, Inc.) who have been employed for at least six months as of the anniversary date of the ESOT are eligible to participate. Allocations are based on the ratio of an eligible individual's salary to the total salaries of all eligible persons. Standards for vesting are based upon years of service with the Company in accordance with current regulatory guidelines. Under the ESOT, the Company is not required to make any contributions; however, the Company's current intention is to contribute 15% of pre-tax earnings to the ESOT. The Company contributed a total of $713,000 and $763,000 to the ESOT for the years ended December 31, 1985 and 1986, respectively. The amount of compensation indicated in the table does not include amounts contributed under the ESOT.

Certain Transactions

The Company leases an office located at Grain Valley, Missouri, from Robert C. Harmon at a current rate of $18,000 per year. Lease payments for 1987, 1988 and 1989 will continue to be $18,000 per year. In the years ended December 31, 1982, 1983, 1984, 1985 and 1986 the Company made capital improvements to this leased facility, in the amount of $54,716, $14,715, $14,275, $6,605 and $10,897, respectively. Improvements consist primarily of exterior bricking, parking lot resurfacing and remodeling of the office facilities. The present lease expires December 31, 1989, and the Company has the right and option to renew this lease for an additional five-year period to commence January 1, 1990. Management believes that the rental payable by the Company under the lease is reasonable and either comparable to or more favorable than rentals which the Company would have been required to pay to an unaffiliated lessor.

Herbert M. Kohn, director of the Company, is a member of Linde Thomson Fairchild Langworthy Kohn & VanDyke, P.C., which the Company has retained for several years as legal counsel. Such firm has also been retained by the Company for the current year.

APPROVAL OF SELECTION OF AUDITORS

Management recommends voting to approve the selection of Peat, Marwick, Mitchell & Co. as Auditors for the Company for the forthcoming fiscal year. This firm has served continuously as Auditors for the Company since 1969.

A representative from Peat, Marwick, Mitchell & Co. will be present at the shareholders' meeting and will be available to make a statement if he or she desires to do so and to answer appropriate questions asked by the shareholders.

OTHER MATTERS

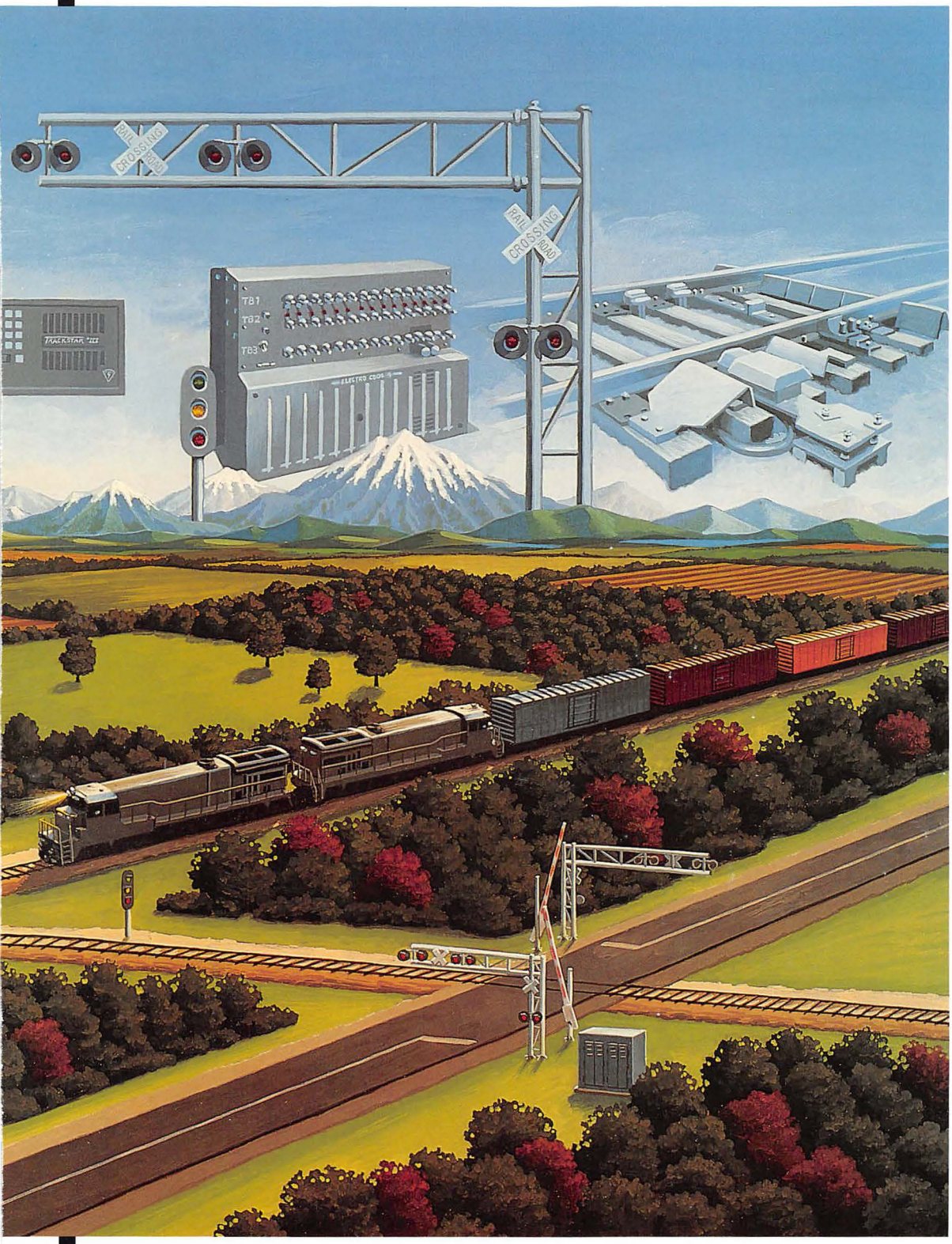
Management is not aware of any other matters which may come before the meeting. However, if any other matters properly come before the meeting, it is the intention of the persons named in the accompanying form of proxy to vote the proxy in accordance with their best judgment on such matters.

BY ORDER OF THE BOARD OF DIRECTORS

Robert E. Harmon
Chairman and President

March 25, 1987

Harmon Industries, Inc.



1987 Annual Report

Corporate Profile

Harmon's stated goal is to become a fully integrated and premier supplier of railroad and transportation communication and control products in North America. Each year Harmon draws closer to that objective as its innovative electronic products continue to supplant those of more established competitors.

In 1987, Harmon started two new companies: Cedrite Technologies, Inc. and CAMCO. Cedrite will manufacture reconstituted railroad ties, and CAMCO, a service organization, will maintain commonly-used signal and communication equipment and supplies at locations convenient to railroad customers.

Harmon manufactures an extensive line of railroad signal and communication equipment, traffic control systems, grade crossing hardware, and allied components.

Harmon is innovative and heavily engineering oriented, a posture that has resulted in a steady flow of new products augmented by timely acquisitions.

The executive management team is both young and experienced. The average age of the eight most senior executives is 44; the president, who has served in that capacity for the past 19 years, is 48. The executive officers have been with the Company for an average of 11 years.

The company was incorporated in Missouri in 1961 as the successor to a business which commenced operations in 1946.

The Company's headquarters is located in Blue Springs, Missouri. Its largest subsidiary, Harmon Electronics, Inc., operates four manufacturing facilities: two in Grain Valley, Missouri, which is some 15 miles east of Kansas City, and two in Warrensburg, Missouri. The Electro Pneumatic Corporation subsidiary has a manufacturing plant in Riverside, California, and the Modern Industries, Inc. subsidiary is located in Louisville, Kentucky with a satellite operation in Jacksonville, Florida.

The Company's common stock is traded in the over-the-counter market, and it is quoted on the NASDAQ National Market System under the symbol HRMN.

Cash dividends were instituted in 1978, and the dividend was subsequently increased on two different occasions. The current rate is 12½ cents per share annually, which is paid semi-annually at 6¼ cents a share.

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Financial Highlights
(Unaudited)

Years ended December 31,	1987	1986	1985
Net sales	$57,068,000	$47,223,000	$52,993,000
Expenses	$53,948,000	$43,085,000	$46,863,000
Income taxes	$ 1,428,000	$ 2,039,000	$ 2,909,000
Net income	$ 1,692,000	$ 2,099,000	$ 3,221,000
Net income per share	$ .38	$ .43	$ .73
Dividends per share	$ .125	$ .125	$ .125
Return on sales	3.0%	4.4%	6.1%
Return on equity	14.6%	20.0%	22.9%
At year end			
Working capital	$11,870,000	$11,599,000	$ 9,962,000
Long-term debt	$14,621,000	$13,793,000	$ 6,604,000
Approximate number of shareowners [1]	746	750	900
Number of employees	731	751	711
Outstanding shares	4,471,587	4,471,587	4,768,847

[1] Includes only *registered* shareholders. Since a number of shareholders hold their shares in "street name", the number of individual shareholders is undoubtedly larger than the amount shown.

Report to Shareholders

Nineteen eighty-seven was a fair year in terms of total earnings – 38 cents a share for 1987 versus 43 cents a share for 1986. But it was an excellent one with regard to the *trend of earnings* and for introductions of products and entirely new business enterprises that have exceptional promise. Even so, starting new businesses involves unavoidable start-up costs. Had we not started two new companies, Cedrite Technologies, Inc. and Consolidated Asset Management Company (CAMCO), our 1987 earnings would have exceeded those of 1986.

We began 1987 slowly but finished with a rush. Earnings for the first six months were dismal: 11 cents a share versus 24 cents a share for the same period last year. Earnings rebounded nicely at mid-year and outpaced those of the final six months of 1986 — 27 cents a share versus 19 cents a share. Sales were also much stronger in the second half of 1987 — some 23% better than those of the first half of 1987. Finally, orders received but not yet shipped accelerated during the last half of the year. At 1987 year-end, the order backlog was nearly double that of a year ago: $16.8 million versus $8.5 million. Thus we entered 1988 with a strong sales trend and an impressive backlog of orders.

The rapidly changing face of our industry, which I spoke to you about last year, continued without let-up as the railroads maintained their drive to streamline operations. For suppliers, it was tough sledding. The railroads kept a lid on supplier price increases and simultaneously sought out improved products and operating methods to reduce their operating costs.

Profit margins slipped over three percentage points last year. A shift in product mix toward lower profit margin items, selected price concessions, and Modern's traditionally lower profit margins were all contributing factors, but we were largely able to offset the effect of lower margins with higher sales volume, particularly during the second half of 1987.

Given the choice of holding traditional margins and hoping to keep business or cutting prices to maintain and even increase business, we opted for the latter. This policy keeps us in vital contact with our customers and increases our market penetration. A side benefit is that sheer competitive necessity forces us to find ways to operate leaner than we ever thought possible. We are doing this, and we are better for it. Profitability is the key. It establishes a track record that facilitates financing and acquisitions and, more importantly, it provides the funds for continuing research and corporate growth.

Purchasing patterns within our industry strongly indicate the railroads are seeking innovative, low-cost suppliers that can provide a broad array of packaged services and products. This scenario dovetails with our corporate philosophy. Over the past several years we have emphasized acquisitions, new product development, and ventures beyond signal products to encompass a much broader range of railroad-related products and services. As a result, our competitive position is

extremely strong. And we did two things last year to make it even stronger.

We launched Cedrite Technologies – a new corporation that will manufacture durable railroad ties out of worn and discarded ties, which previously posed an immense disposal problem for all railroads. We are currently building a manufacturing plant that we expect will be operational by mid-year 1988. If all goes well, Cedrite will provide one of the most innovative products of the decade and produce major earnings for Harmon.

We also started a purchasing and distribution subsidiary that will offer a wide range of railroad services. It will maintain a physical inventory of commonly-used railroad products that the railroads can draw upon as needed. Preliminary studies indicate substantial savings for the railroads.

The future looks bright. We are confident 1988 will be a strong growth year in sales and earnings, especially so if we are able to begin our railroad tie production as scheduled. We are well-positioned to compete in this rapidly changing railroad industry, and we believe our competitive positioning will enable us to enhance returns on your investment, which is a major objective of this corporation.

Robert E. Harmon
Chairman and President

Blue Springs, Missouri
March 18, 1988

Robert E. Harmon
Chairman of the Board and President

The Harmon Operating Companies

Harmon's subsidiary presidents are (left to right, standing) : Charles R. Tucker, Modern Industries, Inc.; James P. Lemieux, Harmon Electronics, Inc.; (seated): James R. Meyer, Consolidated Asset Management Company, Inc.; Richard E. Risely, Electro Pneumatic Corporation; and James D. Schembs, Cedrite Technologies, Inc.

AT YEAR-END 1987, Harmon Industries, Inc. (Harmon) owned five subsidiaries. They are Harmon Electronics, Inc., Modern Industries, Inc. (Modern), Electro Pneumatic Corporation (EPC), Cedrite Technologies, Inc. (Cedrite), and Consolidated Asset Management Company, Inc. (CAMCO). All are wholly-owned except Cedrite, which is 80%-owned. Each manufactures products or provides services for the railroad industry, and each supports one another where possible, particularly in sales and research efforts.

Harmon Electronics, the largest subsidiary, is the operating component of the original Harmon company, which was founded in 1946. Its forte is high-tech solutions to railroad problems. It makes electronic controls for rail/highway grade crossings, a variety of communication and safety-related products, and complete traffic control systems. Harmon's principal research efforts are also conducted here. Harmon Electronics operates from five facilities. All are in Missouri; three in Grain Valley and two in Warrensburg.

Modern was acquired in 1986. It fabricates heavy metal products – the framework on which grade crossing signals are mounted and the sturdy metal cases that house the electronics that power those signals and a variety of other controls used by the railroads. Modern also installs and wires control equipment in its metal cases and ships the entire package as a system. Modern operates from two plants; one is in Louisville, Kentucky, and the second is in Jacksonville, Florida.

EPC was acquired in 1984. Like Harmon Electronics, it is also oriented toward electronic products. Its principal product lines, electronic track circuits and electronic interlockers, control the block signals that direct the movement of trains. Electronic interlockers control the movement of switches and position of signals where two or more tracks intersect. This product expanded Harmon's product line considerably and introduced new technology to the corporation.

Cedrite is Harmon's first railroad manufacturing venture outside the general area of electronics. Cedrite has a patented technology to manufacture reconstituted railroad ties out of discarded old conventional ties. This is an approximate $14 million venture. An 80,000 square foot manufacturing plant is under construction in Kansas City, Kansas, and is expected to be operational by mid-year 1988. This technology has been thoroughly tested for the past ten years, and industry reception has been quite favorable. The majority of Cedrite's capacity for the next two years is already under contract.

CAMCO, a venture founded last year, is Harmon's smallest subsidiary and the only one not involved in manufacturing. It will be a service enterprise – maintaining commonly-used signal and communication equipment and supplies at locations convenient to railroad customers. CAMCO, which is currently headquartered in Blue Springs, Missouri, is negotiating its first contract with a major railroad. □

Harmon Electronics, Inc.

Harmon's Total Traffic Management System (TTM) is designed to improve productivity while reducing overall operating costs. Bob Busby demonstrates the capability of moving between either screen with the Trackball.

HARMON Electronics, Inc., the Company's largest subsidiary, experienced only a moderate increase in shipments last year, but a tremendous gain in orders booked that will be shipped during 1988. Internally, it made important progress last year in bringing new products to market, in ongoing product development, in improving manufacturing productivity, and in securing gains in quality levels.

New Product Development

The railroad signal and communications departments find themselves in a quandary. Much of their operating equipment is dated technology. The equipment still works, but it is expensive to maintain, and railroads are reluctant to put additional monies in yesterday's technology. A revolutionary Advanced Train Control System (ATCS) is being developed throughout the industry. Harmon Electronics is participating in its development, but it's not operational yet. It will involve sophisticated radios handling complex data communications between new automated control centers and a wide range of microprocessor based systems, both on locomotives and at trackside sites.

Harmon Electronics' product development focus is to make products that will fit into the ATCS when it becomes operational, but at the same time have total compatibility with products currently in the field. This strategy provides for an ongoing revenue stream while simultaneously building a foundation for the baseline business of the 1990s.

For example, it introduced a new locomotive radio last year that combines both voice and data capabilities with 100 accessible channels and automatic features that outperform anything else on the market. By itself, it is an outstanding radio that works well within the framework of current technology. However, when it is linked to a new electronic interlocking

The Locomotive Speed Limiter (LSL) will make braking applications if the engineer fails to do so.

control unit presently being developed at Harmon Electronics, the combined product ushers in a new market – radio-controlled wayside facilities – and this technology will ultimately become a cornerstone to ATCS.

Locomotive Speed Control

In response to demand following the Conrail/Amtrak accident in Maryland last year, Harmon Electronics introduced a sophisticated speed limiting device for locomotives that automatically slows a train should visual warning signals go unnoticed or ignored.

Harmon Electronics, Inc., continued

Cindy Carter removes boards from the Amistar automatic insertion machine which is capable of inserting over 6,000 components per hour.

Since the Federal Government now requires such a safety device for certain trains, orders have been brisk.

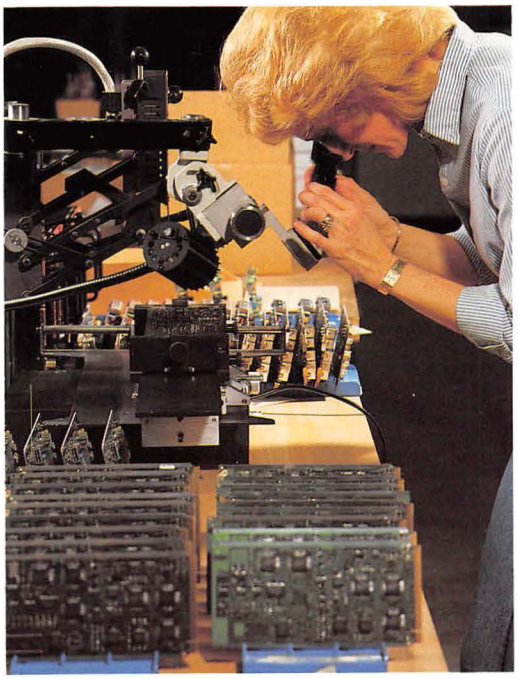
This product is also being installed on a major southern railroad in conjunction with a sophisticated locomotive cab signal system that outperforms all others. Its performance and cost savings justify its purchase today, but it has the added feature of compatibilty with future ATCS at the user's option.

Other new products introduced last year included a radio-based data communications system, a refined Track Star radio that includes an alphanumeric display, and the only motion detector on the market that is immune to interference encountered with high level cab signal track circuits.

Under development is an advanced intelligent scanner for existing and new hot box detectors, an ultrasonic clearance detector for use with stacked container freight cars, and a system to detect defective wheel bearings through analysis of the sounds emitted by a passing train. Many other projects continued their progression within the Harmon Electronics design phase.

High-tech product development is also evident in the printed circuit board facility at Warrensburg, Missouri. Sixty-five percent of the facility's output is for customers other than Harmon. The sales of high profit multi-layer boards, which sandwich the equivalent of many boards in one package, doubled in 1987 over 1986.

Much progress was made with internal systems and strategies to increase productivity. During 1987, the delivery time on major products was reduced significantly, a noteworthy achievement in itself, but all the more remarkable in the face of a rapid influx

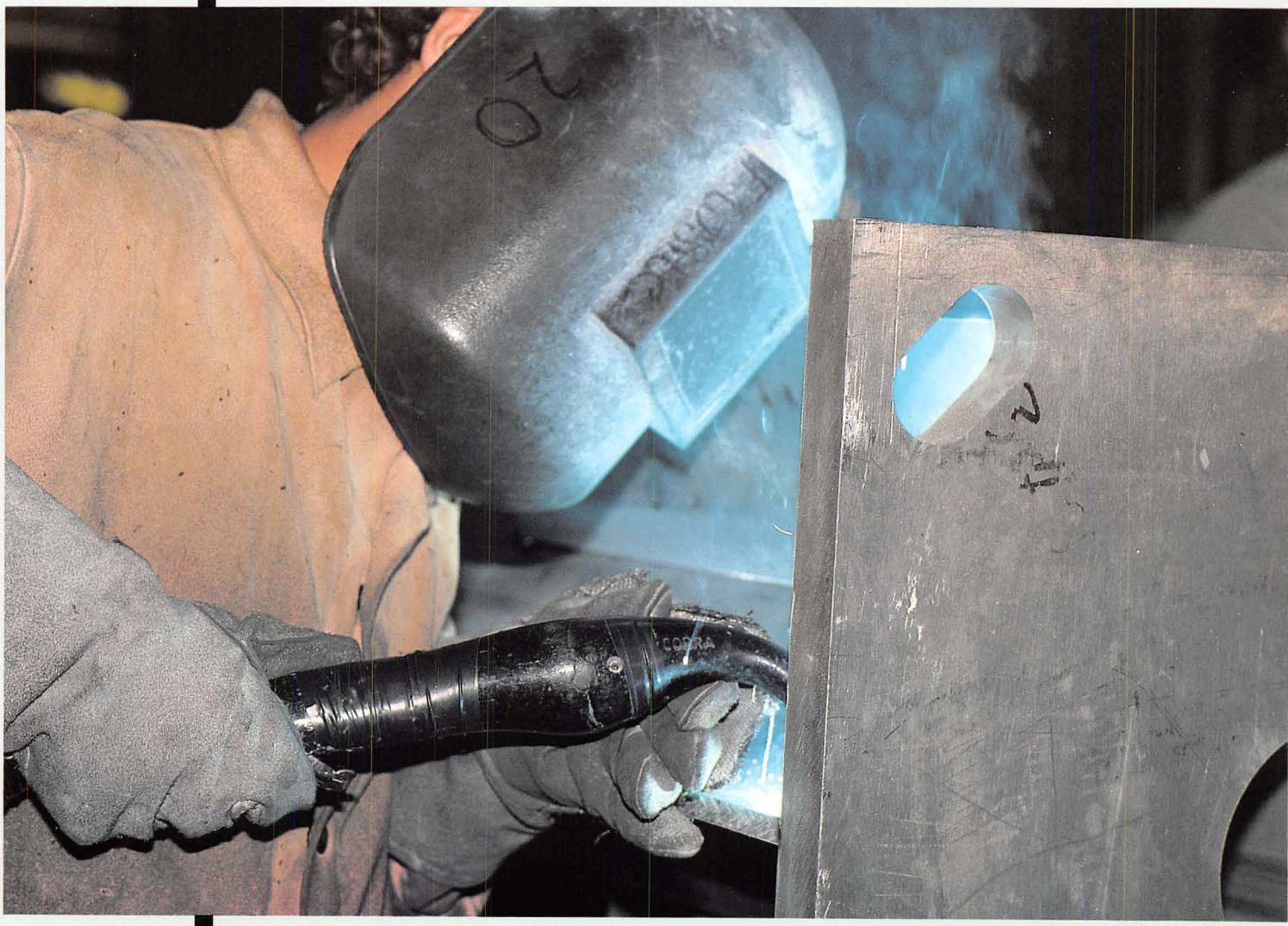


Wanda Smith inspects surface mounted devices (SMD), mounted on boards that make up part of Harmon's voice-data radio.

of orders in the latter months of 1987 that more than doubled the order backlog. Finally, product quality was monitored through a statistical process control method, which indicated a gain in quality and reliability of the goods we produced last year. □

Modern Industries, Inc.

Modern's specialities are fabricating and welding of heavy cantilevers onto which signal hardware is mounted, case wiring, and wayside installation services.



Modern sales were $5 million for the final five months of 1986 and $14 million for the 12 months of 1987, which produced a record level of income. This was Modern's first full year operating as a Harmon subsidiary. It provided Modern with a broader sales exposure as all sales of railroad products of the subsidiaries are handled at the Harmon corporate level.

In turn, Modern's signal hardware, case wiring and installation services provided Harmon with key ingredients toward establishing a full systems capability. In conjunction with products of its other subsidiaries, Harmon can now put together complete signal systems in house. In prior years, sales of these systems were seldom successful because major components had to be purchased from competitors, which usually made us non-competitive. With the addition of Modern's products, we booked several major contracts last year that aggregated more than $12 million.

In many ways, 1987 was a year of transition as Modern moved from a closely-held, privately-owned business to subsidiary status in a highly technologically oriented public company. There are many new systems to implement, which run the gamut from inventory control and production scheduling to accounting and financial reporting.

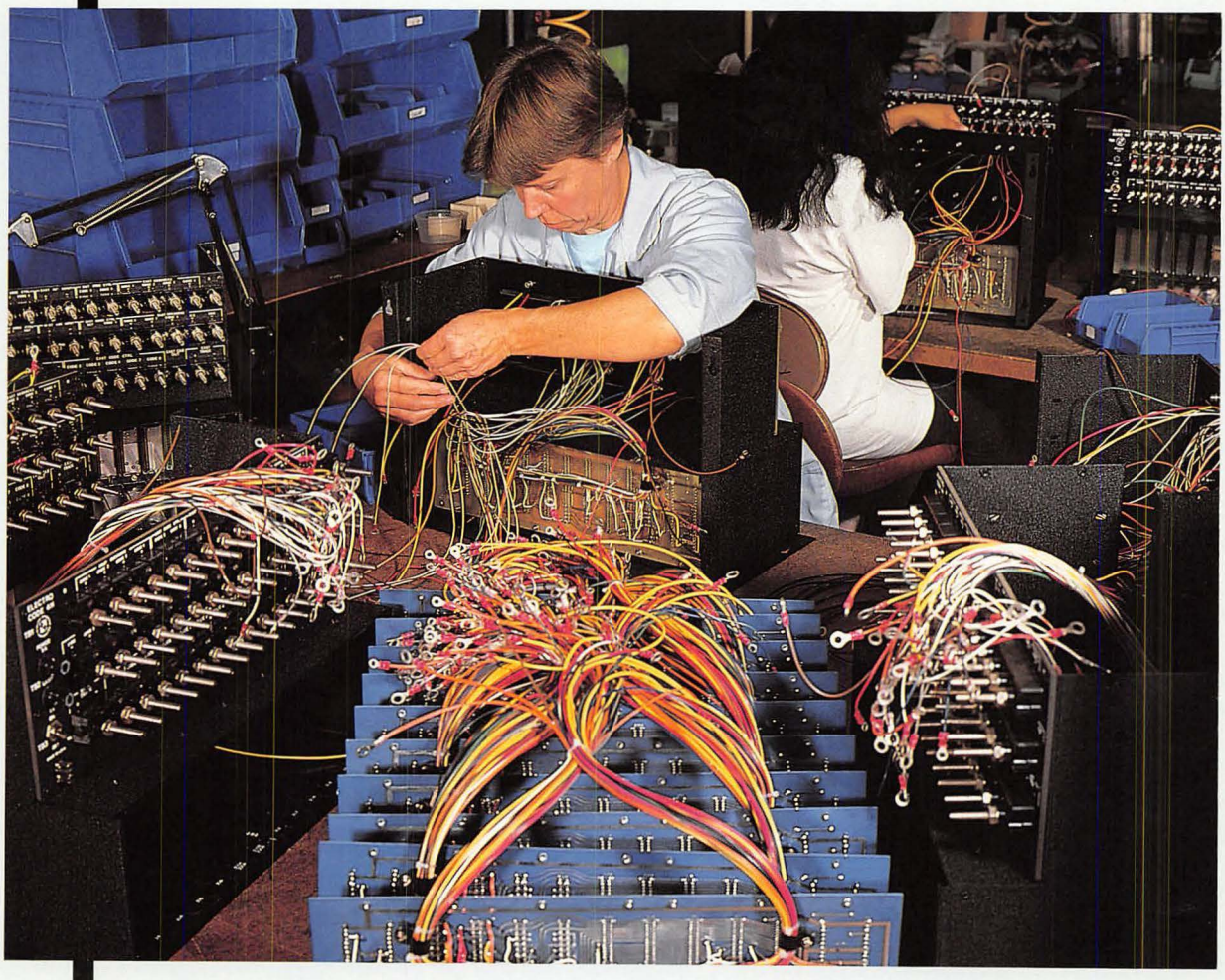
Progress was made last year in upgrading computer hardware and software for its information systems, including the capacity of Modern's main frame computer. The engineering function was upgraded to include a computer-aided design capability, and numerous personal computers were added at various work stations to accommodate the increase in sales volume. In addition, Modern also consolidated its two Louisville operations into a single plant, and substantial cost savings were realized.

With some of its new computerized systems now on board, Modern made progress its first year toward the development of control and decision supporting information. Major emphasis is currently being directed toward areas of inventory management, procurement, quality control and marketing analyses.

In the midst of this transition year, Modern commenced a thorough design review of its major product families, which included improving the functional performance of its products, addressing a broader selection of options and features, and evaluating methods to reduce manufacturing costs.

Compared to Harmon Electronics and EPC, Modern products typically yield lower profit margins. Modern's narrower margins are largely due to the inherent nature of metal products manufacturing, as materials costs are far more significant than in electronics manufacturing. This was true when Modern was a private corporation; it essentially remained true during its first year as part of the Harmon organization. Its costs are higher than either Harmon Electronics' or EPC's relative to its selling prices. And in the current competitve environment, raising prices is not a practical solution. □

Electro Pneumatic Corporation



Wiring EPC's new Electro Code 4s at the Electro Pneumatic plant in Riverside, California. The Electro Code 4 eliminates the need for most wayside line wires and many expensive mechanical relays, and provides the railroads with an effective cost savings of approximately 40%. The Electro Code 4 accounted for a substantial portion of EPC's sales last year.

Electro Pneumatic Corporation (EPC) was acquired by Harmon in 1984. This acquisition was an integral part of Harmon's overall strategy to enlarge its product base so it could quickly become recognized by the railroads as the premier, broad-based, railroad equipment supplier and service organization in the nation.

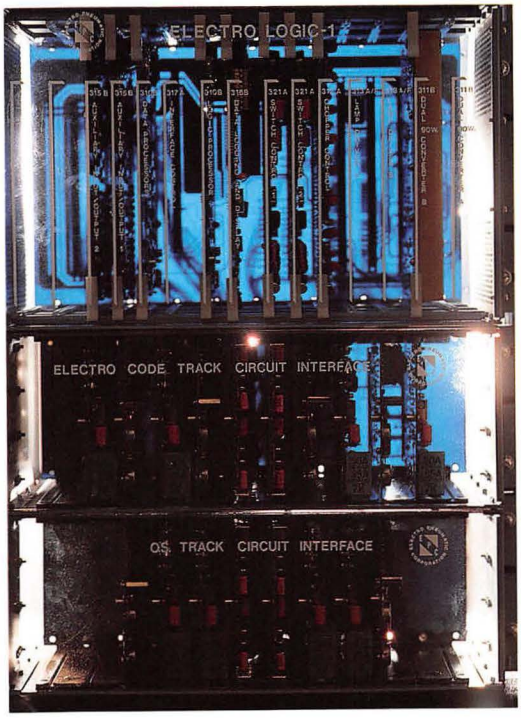
This decision to expand was made at a time when Harmon sales had been essentially flat for four consecutive years, and the signal supplier industry was consolidating and retrenching. Yet, this was a market position we sensed would become increasingly important with the passage of time.

That decision has since been vindicated in the marketplace as the railroads' collective drive toward increased operating efficiencies dovetails with the broad array of labor saving products and services that Harmon now offers.

The EPC acquisition was ideal in itself. There was virtually no product overlap. EPC had a technologically superior product that gave Harmon its first entry into wayside signal controls, signal equipment that is used for control of main line operations. Until the EPC acquisition, Harmon's products were largely focused on controls for rail/highway grade crossings.

Since the acquisition, synergy has played an important role in EPC's consistent growth. The combined Harmon sales force has given the EPC product line additional exposure to railroads throughout the nation as well as several foreign countries.

For example, Harmon's system sales efforts produced contracts for several total signal packages last year using Harmon and EPC products that, in some instances, included assembly by Modern. These projects included Amtrak's all new signal system

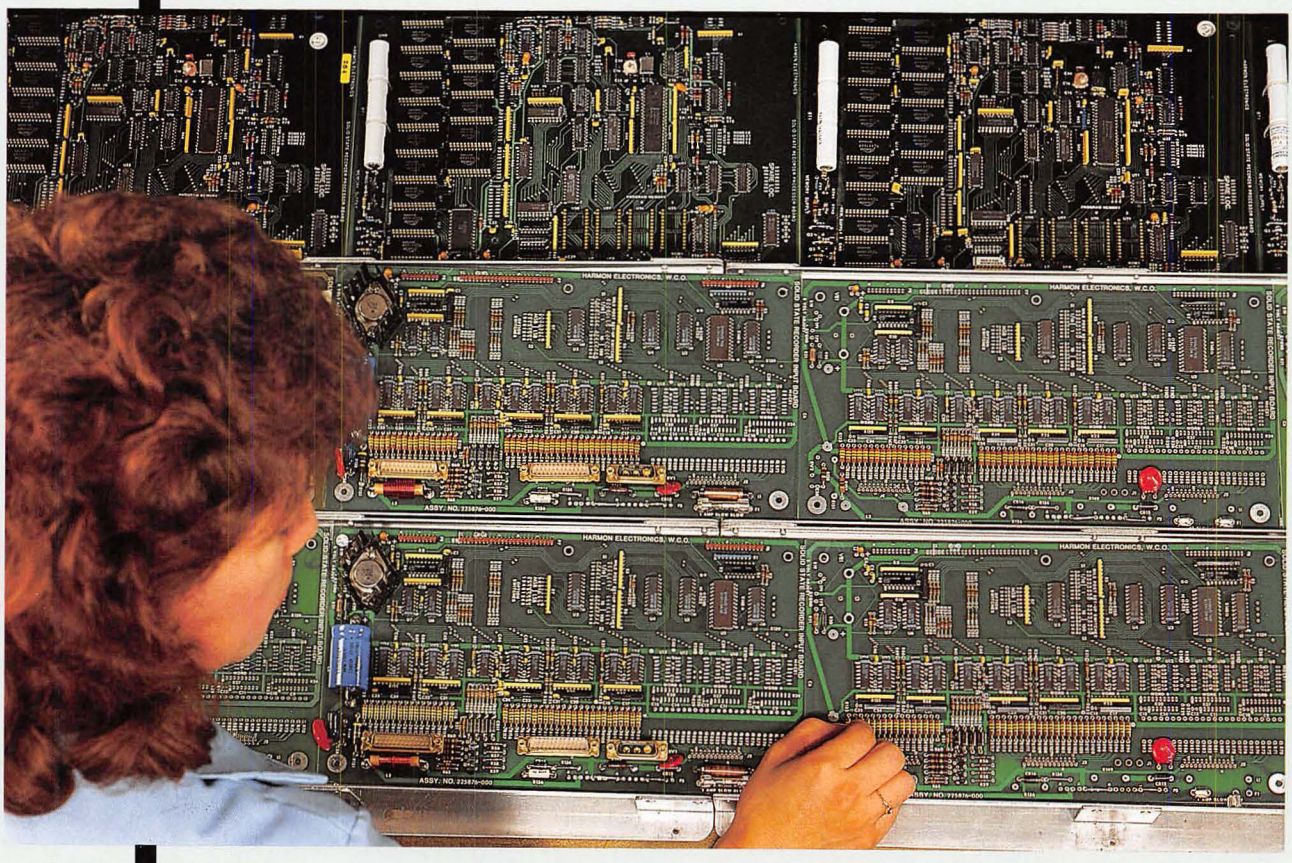


Electro Logic replaces thousands of dollars worth of specialized relays.

between Atlantic City and Philadelphia and a major signal modernization program for the Florida East Coast Railroad.

EPC had record sales for 1987. Its Electro Code 4 set the pace. This newest version of the Electro Code series, which eliminates the need for most wayside line wires and many expensive relays, uses microprocessors to perform the same functions done by earlier Electro Code versions,

Electro Pneumatic Corporation, continued



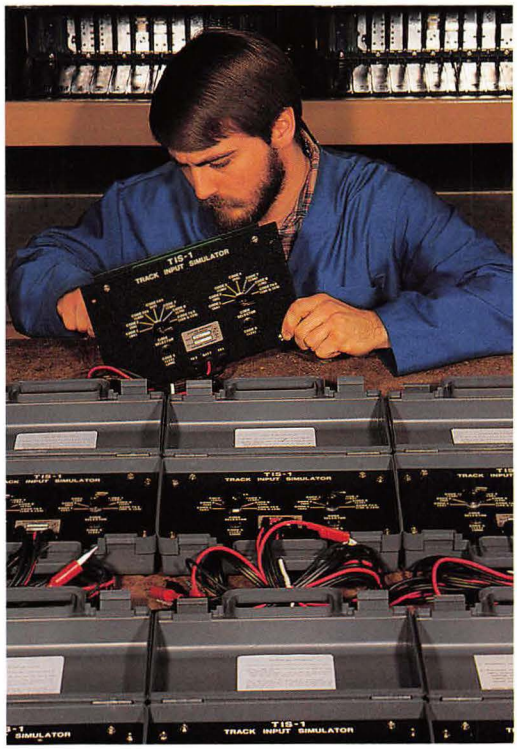
Maria Garcia, an assembly line team leader at Electro Pneumatic, inspects a motherboard for an EPC data recorder. This is a microprocessor-based system to record data electronically at wayside locations, thereby eliminating mechanical drives and the need to continually replace paper rolls on which data was previously recorded.

and has many additional features. These resulted in a more economical package and reduced the cost of signalling by 40% over earlier models. In the event of a green light burn-out, for example, the system automatically switches over to a yellow signal, which allows a train to continue, albeit more slowly. Without this feature, a train would have to come to a complete stop, tying up rail traffic and delaying freight deliveries.

One of the most important developments of 1987 was the installation of 17 Electro Logic systems to control interlockings on the Southern Railway. It is one of the largest installations of this type of equipment in this country. This system is used in conjunction with the Electro Code 4 and certain products manufactured by Harmon Electronics. Together, they provide a complete traffic control system without the use of mechanical relays, which for years have been one of the most costly elements in control systems.

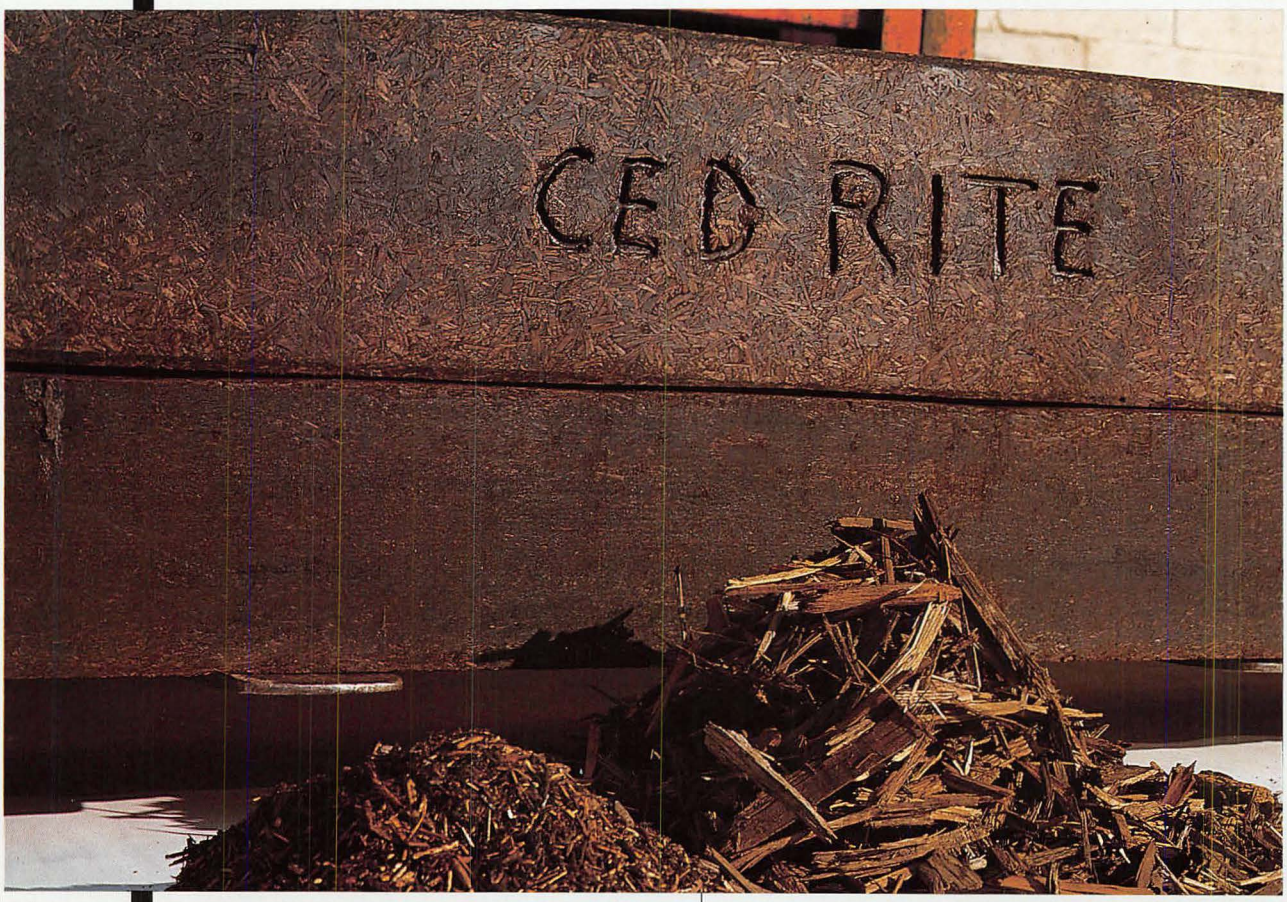
Internally, EPC meticulously examined its production methods last year in an effort to increase productivity and reduce inventory levels. It was able to reduce on-hand inventory requirements by reducing the number of jobs in progress at any given moment by concentrating on each individual project until it was completed. In essence EPC switched from a typical production line to a coordinated team effort. This involved retraining some production workers to perform a variety of jobs as each became part of a larger team effort.

Productivity soared. By year-end, the number of man hours required to produce EPC's total output had declined sharply. This becomes all the more remarkable considering that EPC's 1987 sales attained record levels. □



Tim Sullivan performs a final inspection on a new EPC product, a Track Input Simulator. This device emulates the codes generated by Electro Codes, and enables railroad signal supervisors to field check the output of Electro Codes rapidly and economically.

Cedrite Technologies, Inc.



The revolutionary Cedrite railroad tie. Old, discarded railroad ties are chopped up into small particles, blended with a special resin, and molded under heat and pressure, which results in a more durable and uniform tie than a conventional creosote-treated new tie. Production is already sold out for the next 18 to 24 months.

CEDRITE will manufacture reconstituted railroad ties from worn-out, used ties. Production is expected to begin by mid-year 1988 when construction of a manufacturing plant in Kansas City, Kansas, is completed. This revolutionary process is patented. In essence, it involves chopping worn- out ties into small particles, blending them with a special resin, and then bonding that mixture under high pressure and heat to produce a reconstituted railroad tie.

Prototype ties were first made ten years ago. Since that time, the ties have undergone rigorous and exhaustive laboratory and field tests that indicated the Cedrite tie possessed strength and durability far in excess of conventional, creosote-treated wooden ties. This longevity translates into reduced maintenance and inspection costs for the railroads. The process itself also helps alleviate an ongoing disposal problem every railroad encounters with its old ties. Federal, state and local governments severely restrict the disposal practices for old ties after they have been removed by the railroad industry.

The Cedrite tie has superior resistance to damage by rot or insects. Special resins penetrate the cellulose fibers and lock out unwelcome invaders. The tie has no grain and therefore is essentially immune to warping or splitting. Its higher density provides a better "grip" for conventional spikes, reducing the problem of loosened spikes. No additional special equipment is needed for installation. Unlike concrete ties, the Cedrite tie can be laid alongside conventional ties on an individual basis, which makes it an excellent replacement tie. The market for replacement ties alone is estimated at 20 to 25 million units annually.

Harmon's Cedrite manufacturing plant under construction in Kansas City, Kansas.

In July, 1987 Harmon purchased an 80% interest in Cedrite. Groundbreaking for the first commercial manufacturing facility followed in October. Detailed engineering and fabrication of the special manufacturing equipment began during the summer and has continued into early 1988. The Cedrite plant will be a highly automated facility using computerized control to produce product uniform in size and quality. The "merry-go-round", an elaborate material handling system, conveys molds from one manufacturing operation to another until the tie inside has been formed and cured into a finished product.

The plant is designed to produce 600,000 ties annually. Prior to breaking ground for the plant, Cedrite secured orders from two major railroads in excess of $20 million, which would constitute Cedrite's total anticipated output for the next 18 months to two years.

Harmon expects to invest approximately $14 million in the first plant. The long-range plan calls for additional plants to be built along rail lines in other parts of the country as the market dictates.

Barring any unforeseen problems, Harmon expects the Cedrite process to become a major contributor to future revenues and profits. □

Corporate Officers

Harmon Industries, Inc. corporate officers are (left to right): Ronald G. Breshears, Vice President – Human Resources; Vincent D. Burget, Vice President – Corporate Affairs; Charles M. Foudree, Executive Vice President – Finance, Treasurer and Secretary; Robert E. Harmon, Chairman, President and Chief Executive Officer; Robert G. Clawson, Vice President – Sales and Marketing; Stephen L. Schmitz, Vice President – Controller; and Robert E. Heggestad, Vice President – Technology.

Financial Reports

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Selected Financial Data*

(in thousands, except per share items)

Years ended December 31[1]	1987	1986	1985	1984
Operations				
Net sales	**$ 57,068**	$ 47,223	$ 52,993	$ 44,445
Cost of sales	**41,492**	32,693	36,521	32,669
Gross profit	**15,576**	14,530	16,472	11,776
Selling, general and administrative expenses	**10,856**	9,362	8,497	6,332
Operating income	**4,720**	5,168	7,975	5,444
Other expense (income)	**1,600**	1,030	1,845	793
Earnings from continuing operations before income taxes	**3,120**	4,138	6,130	4,651
Income taxes	**1,428**	2,039	2,909	2,214
Earnings from continuing operations	**1,692**	2,099	3,221	2,437
Discontinued operations	**—**	—	—	—
Net earnings	**$ 1,692**	$ 2,099	$ 3,221	$ 2,437
Effective income tax rate	**45.8%**	49.3%	47.5%	47.6%
Return on sales	**3.0%**	4.4%	6.1%	5.5%
Return on year end equity	**14.6%**	20.0%	22.9%	15.6%
Weighted average outstanding shares	**4,472**	4,854	4,430	4,733
Per Share Data[2]				
Net earnings	**$ .38**	$ .43	$ .73	$ .51
Cash dividends	**.125**	.125	.125	.0875
Book value	**2.60**	2.34	2.94	3.21
Price/earnings ratio range[3]	**13.2-22.4**	15.4-27.3	8.2-16.1	7.8-13.7
Other Data				
(At Year End)				
Total Assets	**$ 38,738**	$ 34,045	$ 30,111	$ 30,627
Working capital	**11,870**	11,599	9,962	12,370
Long-term debt	**14,621**	13,793	6,604	6,752
Stockholders' equity	**11,604**	10,470	14,038	15,579
Current ratio	**2.11:1**	2.36:1	2.17:1	2.65:1
Quick assets ratio	**1.03:1**	.96:1	.90:1	1.07:1
Debt to equity ratio	**2.34:1**	2.25:1	1.14:1	.97:1
Capital additions	**3,552**	2,212	2,919	1,467
Depreciation and amortization	**2,531**	2,074	1,775	1,353
Outstanding shares	**4,472**	4,472	4,769	4,850

(1) The Company changed its year end to December 31 from September 30, effective December 31, 1981.
(2) Adjusted for all stock splits and stock dividends through December 31, 1987, inclusive.
(3) High and Low prices for the year divided by earnings per share for the year.

* *Unaudited*

	Years ended September 30,[1]						
	1983	1982	1981	1980	1979	1978	1977
	$ 29,618	$ 27,783	$ 30,248	$ 27,693	$ 21,113	$ 12,226	$ 11,002
	22,355	20,120	21,841	21,482	15,907	9,234	7,836
	7,263	7,663	8,407	6,211	5,206	2,992	3,166
	4,748	4,420	4,677	3,723	3,131	2,115	1,815
	2,515	3,243	3,730	2,488	2,075	877	1,351
	513	585	699	546	240	(53)	55
	2,002	2,658	3,031	1,942	1,835	930	1,296
	900	1,082	1,335	788	800	407	611
	1,102	1,576	1,696	1,154	1,035	523	685
	—	—	(6)	184	340	112	55
	$ 1,102	$ 1,576	$ 1,690	$ 1,338	$ 1,375	$ 635	$ 740
	45.0%	40.7%	44.0%	41.4%	44.3%	44.5%	47.2%
	3.7%	5.7%	5.6%	4.8%	6.5%	5.2%	6.7%
	8.5%	12.9%	15.4%	14.1%	16.3%	8.6%	10.5%
	4,650	4,650	4,650	4,650	4,650	4,650	2,688
	$ .24	$ .34	$ .36	$ .29	$ .30	$ .14	$ .28
	.075	.075	.075	.0625	.0625	.0625	—
	2.78	2.62	2.35	2.04	1.82	1.58	2.61
	14.3-28.2	7.9-12.1	7.9-18.8	8.0-18.5	3.4-11.9	7.7-12.7	2.0-5.5
	$ 21,880	$ 19,330	$ 19,219	$ 21,353	$ 15,495	$ 10,390	$ 9,935
	10,510	9,052	9,031	10,224	6,816	4,822	5,338
	3,956	3,324	3,638	6,019	1,474	—	—
	12,925	12,172	10,945	9,499	8,452	7,368	7,023
	3.35:1	3.63:1	3.08:1	2.84:1	2.27:1	2.70:1	2.90:1
	1.27:1	.94:1	1.04:1	.98:1	.80:1	1.20:1	1.87:1
	.69:1	.59:1	.76:1	1.25:1	.83:1	.41:1	.41:1
	1,082	1,908	1,873	1,687	1,073	1,281	865
	1,082	996	792	565	418	350	305
	4,650	4,650	4,650	4,650	4,650	4,650	4,650

Financial Review

Management's Discussion and Analysis of the Summary of Operations and Financial Condition

Results of Operations
Sales increased 20.8% to $57.1 million for 1987, a gain of $9.8 million over 1986. Earnings declined 19.4% to $1.7 million from $2.1 million reported for 1986.

The 1987 sales increase relative to 1986 needs further explanation. Sales for 1987 include 12 months of operations of Harmon's subsidiary, Modern Industries, Inc., versus only its final five months of operations for 1986 since Modern was not acquired by Harmon until August 1, 1986.

Earnings were lower in 1987 largely because of three factors:

- Harmon incurred substantial additional one-time start-up costs to launch two new subsidiaries, Cedrite Technologies, Inc. (Cedrite), and Consolidated Asset Management Company, Inc. (CAMCO)

- The 1987 sales increase was chiefly comprised of products that historically generate relatively low profit margins.

- R&D expenditures increased substantially from previous years to $3.3 million in 1987 from $2.4 million in 1986 and $2.1 million in 1985.

Sales Analysis
Table 1 appearing on the page opposite entitled "Gross Sales By Product Function" should be read in conjunction with the following commentary.

Compared to 1986 sales, Harmon sales increased in four categories but declined in two: Signal Control Track Circuits and Train Inspection Stations, both of which contain substantial electronics and deliver traditional profit margins. The large increase, Custom Products for Railroads, contains much of Modern's output, which historically generates reduced profit margins. Thus Harmon's sales gains in 1987 were largely achieved from lower profit items and its sales reductions were among its more profitable items.

In addition, selling prices remained extremely competitive throughout the year. Some price reductions were granted, but no price increases were obtained. Thus normal inflationary pressures on expenses (insurance, salaries, and certain raw materials) were not ameliorated at all as nominal price increases to offset creeping inflationary pressures were impossible to obtain.

Further, Modern contributed approximately $14 million in sales for 1987, $5 million for 1986, and nil for 1985, since it was not acquired by Harmon until August 1, 1986. Thus, by backing out Modern's sales contribution for the past two years, it becomes apparent that Harmon sold slightly more of its traditional products in 1987 than in 1986, but neither year was as strong as 1985. Sales for 1986 were roughly 20% below those of 1985. The decline in sales for 1986 reflects reduced purchasing by railroads collectively, a pattern which continued into 1987. In terms of market share, Harmon believes it maintained or increased its share in both 1987 and 1986, but that

the total market was smaller.

Gross Profit

On a sales increase of some $10 million for 1987, gross profit was up about $1 million, a rather disappointing increase. As a percentage of sales, gross profit margins decreased 3.5 percentage points from 30.8% to 27.3% for 1987. This is the direct result of increased sales of lower profit margin items (largely manufactured by Modern, which probably will never have margins like traditional electronic products) and reduced sales of higher profit products. This effect can be seen in table 2 on this page. Cost of sales, expressed as a percent of sales, increased to 72.7% for 1987 compared 69.2% for 1986. That increase of 3.5 percentage points on sales of $57.8 million translates into $2 million less gross profits than would have been generated if Harmon had been able to maintain the 69.2% cost of sales it achieved for 1986.

Gross profit declined 11.8% in 1986 versus 1985 largely because sales declined 10.9% for 1986. Harmon was able to maintain almost the same gross profit margin as the previous year (30.8% vs. 31.1%) largely because the bulk of its product mix was similar to that of 1985 (only $5 million of 1986 sales were from Modern), and because dramatic gains in productivity were achieved in 1986, the result of intensive efforts toward this end made during 1985 and 1984.

Selling, General & Administrative

As a percent of sales, these costs decreased to 19.0% of sales after increasing each year since 1984. In

1. Gross Sales by Product Function

	Year Ended December 31,					
	1987		1986		1985	
	$	%	$	%	$	%
	(In Thousands)					
Railroad Crossing Warning Systems	$25,486	44.1%	$24,614	51.5%	$26,855	49.7%
Train Inspection Systems	2,034	3.5	2,585	5.4	5,336	9.9
Signal Control Track Circuits	5,342	9.2	5,469	11.5	5,964	11.0
Custom Products for the Railroads	11,891	20.6	5,070	10.6	4,544	8.4
Radio Communication Equipment	4,038	7.0	2,541	5.3	3,965	7.3
Other	8,999	15.6	7,511	15.7	7,348	13.7
Total	$57,790	100.0%	$47,790	100.0%	$54,012	100.0%

The method of marketing the Company's products is changing to include more systems business, or total signal "packages", which are largely custom made from several different Harmon product categories. Thus direct comparisons with prior years is difficult and less meaningful. For example, 1987 sales of "Custom Products for Railroads" include items that would have previously appeared chiefly under the headings "Railroad Crossing Warning Systems" or "Signal Control Track Circuits."

2. Expenses as a Percent of Net Sales

	Percentage of Net Sales Year Ended December 31,			Percentage of Change		
	1987	1986	1985	1987 over 1986	1986 over 1985	1985 over 1984
Net sales	100.0%	100.0%	100.0%	20.8	(10.9)	19.2
Cost of sales	72.7	69.2	68.9	26.9	(10.5)	11.8
Gross profit	27.3	30.8	31.1	7.2	(11.8)	39.9
Selling, general and administrative expenses	19.0	19.8	16.0	16.0	10.2	34.2
Operating income	8.3	11.0	15.1	(8.7)	(35.2)	46.5
Other expense	2.8	2.3	3.5	55.3	(44.2)	132.7
Earnings before income taxes	5.5	8.7	11.6	(24.6)	(32.5)	31.8
Income taxes	2.5	4.3	5.5	(30.0)	(29.9)	31.4
Net earnings	3.0%	4.4%	6.1%	(19.4)	(34.8)	32.2

Financial Review, continued

terms of dollars, however, these expenses were some $1.5 million higher than in 1986 and about $2.4 million above the 1985 level. SG&A expenses were higher for 1987 than those of 1986 largely because Modern's expenses covered 12 months of operations versus five months in 1986. In addition, the start-up expenses for Cedrite and CAMCO impacted only 1987 since neither was owned by Harmon in prior periods. Further, Harmon increased its sales efforts in 1987, which produced a record backlog of $16.8 million from $8.5 million in 1986. Thus the expense involved to get those orders is charged to 1987 operations, but the actual shipments (which constitute "sales" for accounting purposes) will not occur until 1988. A substantial increase in insurance costs, notably health insurance, also added to increases in this category. SG&A expenses as a percent of sales were higher in 1986 compared with 1985 because of selected product price decreases granted to remain competitive, disproportionate costs relative to Modern's sales output, and the maintenance of sales staff levels with those of 1985 even though sales declined 10.9% in 1986. Harmon management believes sales efforts and support should remain consistent.

Other Expenses
Other expenses increased to $1.6 million in 1987 from $1 million in 1986 and $1.8 million in 1985. This category largely includes interest expense, which relates primarily to the timing of borrowings during the past three years. Interest expense increased in 1987 largely because of $7 million borrowed in November, 1986 to facilitate Harmon's redemption of certain common stock held by a private investor. Additional interest costs incurred in 1987 also included interest on funds borrowed to facilitate the Cedrite acquisition.

During 1986, interest costs were less than those of 1985 largely because borrowings of $13.1 million to redeem a control block of stock from SAB Nife AB were incurred in June, 1985. By November 1985, that debt had been reduced to $4.7 million by applying the proceeds of the stock offering that was made that November. Thus for all of 1986, Harmon had less average debt outstanding than it did either in 1987 or 1985. Interest rates were relatively constant during 1986 and 1987, but somewhat higher during 1985.

Income Taxes
The Company's effective tax rate for 1987 was 45.8% of pretax earnings compared with 49.3% for 1986 and 47.5% for 1985. The decline in the tax rate for 1987 resulted primarily from a decrease in the federal income tax rate, which will decline even further for 1988. To a lesser extent, 1987 taxes also declined because of a research and experimentation tax credit realized that year. The differences between 1986 and 1985 were largely the phase out of investment tax credits for 1986, certain non-deductible expenses associated with the acquisition of Phoenix Data, Inc., and generally higher state tax rates.

The Financial Accounting Standards Board adopted a new ruling (FASB 96) in December 1987. The basic thrust of

this rule requires the Company to reduce the liability that is currently recorded on the books, but which will not be paid until future years, to reflect the current tax rates. These liabilities are currently carried on the books of the Company at the higher, older tax rates. In addition, this ruling requires that the Company write off deferred recoverable income taxes that will not be due in a year in which a deferred tax liability is payable.

FASB 96 must be implemented by 1989. Harmon has not yet implemented this standard, and it is presently studying its effects. However, the Company believes the net effect of writing off the recoverable deferred income taxes and reducing the deferred tax payable will be insignificant. Future effective tax rates may be negatively affected since the Company will not be able to record recoverable income taxes on certain deferred expense items.

Inflation
In the aggregate, inflation has been moderate during the past three years, averaging 4% to 5%. Traditionally, such minor cost increases have been offset by implementing upward price adjustments for Harmon products. Competitive pressures over the past three years have made this impossible. In fact, we have had to reduce prices on certain items to remain competitive and keep market share. Thus, inflation has become a nagging, eroding force that has been offset in recent years only by gains in productivity.

Research and Development
Research and Development expenditures of $3.3 million were 5.8% of sales for 1987 compared to 5% in 1986 and 4% in 1985. R&D expenditures were increased in response to specific customer needs, which became known as a result of intense sales and marketing efforts. These efforts have already resulted in orders for new products, which is one of the reasons Harmon's backlog was $16.8 million at 1987 year-end, up from $8.5 million at 1986 year-end.

The Company's R&D expenditures follow a set corporate policy and are not heavily influenced by current sales or business trends. This policy insures a continuity of product improvement, which is the essence of true growth. Harmon expenses R&D costs as incurred. This often penalizes current performance, as it did in 1987, but new products are never burdened with development cost recoveries.

Liquidity
The "Other Data" section of the Selected Financial Data table, which appears on page 20 in this report, should be read in conjunction with the following comments. Long-term debt increased moderately last year after a sizable increase in 1986. Net debt increased in 1987 to facilitate an 80% acquisition of Cedrite. Debt increased in 1986 to acquire fuel management and train data products from Ensun Corporation, a minority equity position in Phoenix Data, Inc., and for a series of stock purchases and redemptions that occurred in 1985 and 1986 that had the net effect of retiring a block of stock, which previously had given a Swedish corporation effective control of Harmon since 1977.

Financial Review, continued

Traditional measures of liquidity at 1987 year-end (working capital, current ratio, quick assets ratio, debt-to-equity) fluctuated fractionally in both directions from those of 1986, and for the most part, were essentially unchanged from the previous year.

On the whole, these ratios indicate a very good liquidity position for Harmon. In addition, Harmon has a substantial amount of financing available under existing credit lines. (See footnote 4 of Notes to Consolidated Financial Statements, page 34.)

Capital expenditures for 1987 were $3.6 million, of which $2.1 million was used to begin equipping a new manufacturing plant for Cedrite. Capital expenditures for 1986 were $2.2 million and $2.9 million for 1985. Traditionally, plant expansion has been financed with long-term debt, while specific equipment purchases are paid for out of current operations. Acquisitions of products and companies have historically been made from a combination of cash, bank financing, and common stock.

The 1988 capital equipment budget is $8.2 million, of which $5.9 million is earmarked for Cedrite.

Inventories
Inventories decreased $300,000 (2.6%) at 1987 year-end on a sales increase of nearly 20%. This is the reverse of the statistical aberration of last year which posted Modern's year-end inventory figures but only its final five months of sales. Since this year's figures include 12 months of Modern's sales, discussing inventories as they relate to sales for the past two years is still awkward as it is not a meaningful relationship.

Management has done an excellent job of controlling inventory costs over the past several years. In general, it has been able to build more product with less inventory on the shelf because of faster deliveries from suppliers and from improved methods for determining future inventory needs.

Credit and Collections
The month of December, 1987 recorded the largest sales month in Harmon history. It was $2.3 million higher than December, 1986 sales. This is the principal reason receivables at 1987 year-end were $2.9 million higher than those of a year ago. Other factors impacting the increase in receivables were a general increase in total sales for the year and a slowdown in receivable collections. This slowdown principally centers around new accounts that were brought on with the Modern acquisition. The Company has implemented steps to increase credit collections.

Indebtedness
Long-term debt increased less than $1 million last year following a $7 million increase in 1986. The 1987 increase was due to the Cedrite acquisition, which will require additional sums during the first half of 1988 as its new plant is equipped. Other than the Cedrite debt, all other lines were paid down during 1987.

Share Data
Share data presented throughout this report reflects all stock splits and stock

dividends since inception. During 1984-86, there was considerable fluctuation in the number of shares outstanding owing to acquisitions of EPC in 1984 and Modern in 1986, public offerings in 1985, and stock redemptions in both 1985 and 1986. The net effect on shares outstanding was a reduction from 4,650,000 at year-end 1984 to 4,471,587 at 1986 year-end, which remained unchanged throughout 1987. Weighted average shares fluctuated even more during those periods due to the timing between issuing shares for acquisitions, sale of previously authorized but unissued shares, and redemptions of outstanding shares in 1985 and 1986. Neither the weighted nor actual shares outstanding at 1987 year-end reflect 227,027 shares of treasury stock that are reserved for possible debenture conversion, which is explained more fully in note 4 to the accompanying consolidated financial statements. The remainder of the treasury shares (480,231) is pledged against a $2 million bank line of credit.

Fourth Quarter Results (Unaudited)
Sales for the fourth quarter of 1987 rose 18%, and net earnings increased 9.7% compared to the same period for 1986. Per share earnings were 17 cents versus 14 cents for 1986 on a 7.5% decrease in average weighted shares for 1987. Gross profit on sales was 27.5% in 1987 versus 32.8% for 1986. The decline in gross profit is largely attributable to the product mix for each quarter, and 1987 sales contained a higher percentage of lower profit margin products than 1986. Pretax 1987 income fell 12.3% largely because of a sharp rise in interest expense. Nonetheless, net earnings were higher because of lower federal tax rates for 1987 and R&D expense credits that were larger in 1987 than 1986.

Comparative Quarterly Results

		Quarters Ended			
		March 31	June 30	Sept. 30	Dec. 31
		Thousands of Dollars, Except for Per Share Data			
1987	Net sales	$11,950	$13,639	$14,954	$16,525
	Gross profit	3,306	3,620	4,106	4,544
	Net earnings	233	265	437	757
	Net earnings per common share	.05	.06	.10	.17
	Cash dividend per common share	.0625	—	.0625	—
	Stock price range:				
	High	8 1/2	7 1/8	7 7/8	7 3/4
	Low	6 7/8	6	6 1/4	5
1986	Net sales	$10,393	$10,837	$12,012	$13,981
	Gross profit	3,457	3,484	3,002	4,587
	Net earnings	569	559	281	690
	Net earnings per common share	.12	.12	.05	.14
	Cash dividend per common share	.0625	—	.0625	—
	Stock price range:				
	High	11 3/4	11 3/4	9 7/8	8
	Low	9 1/2	8 3/4	7 1/8	6 5/8

Consolidated Balance Sheets
(thousands of dollars)

ASSETS

December 31,	1987	1986
Current assets:		
Cash and cash equivalents	**$ 361**	$ 482
Trade receivables, less allowance for doubtful accounts of $109,000 in 1987 and $89,000 in 1986 (notes 3 and 4)	**10,638**	7,695
Costs and estimated earnings in excess of billings on uncompleted contracts (notes 3 and 4)	**144**	232
Inventories (note 4):		
Work in process	**3,993**	4,091
Raw materials and supplies	**7,211**	7,413
	11,204	11,504
Prepaid expenses and other current assets	**225**	216
Total current assets	**22,572**	20,129
Property, plant and equipment, at cost (note 4):		
Land	**761**	273
Buildings	**3,964**	3,676
Machinery and equipment	**7,937**	6,110
Office furniture and equipment	**5,131**	4,315
Transportation equipment	**1,534**	1,555
Leasehold improvements	**907**	855
	20,234	16,784
Less accumulated depreciation and amortization	**8,951**	7,011
Net property, plant and equipment	**11,283**	9,773
Cost in excess of fair value of net assets of subsidiaries acquired, net of amortization of $539,000 in 1987 and $357,000 in 1986	**1,276**	1,424
Patents, net of amortization of $832,000 in 1987 and $448,000 in 1986 (notes 2 and 4)	**1,969**	1,167
Other assets	**1,638**	1,552
	$38,738	$34,045

See accompanying notes to consolidated financial statements.

LIABILITIES AND STOCKHOLDERS' EQUITY

December 31,	1987	1986
Current liabilities:		
Note payable to bank (note 4)	**$ 555**	$ 445
Current installments of long-term debt (note 4)	**1,775**	1,624
Accounts payable	**4,368**	2,918
Accrued payroll, bonus and employee benefit plan contributions	**1,762**	1,359
Billings in excess of costs and estimated earnings on uncompleted contracts (note 3)	**413**	192
Federal and state income taxes payable	**537**	483
Other accrued liabilities	**1,292**	1,509
Total current liabilities	**10,702**	8,530
Deferred income taxes	**686**	772
Deferred liability (note 7)	**818**	480
Long-term debt and capitalized lease obligations (note 4)	**14,621**	13,793
Minority interest	**307**	—
Stockholders' equity (notes 4, 8 and 9):		
Common stock of $ .25 par value: authorized 10,000,000 shares, issued 5,178,845 shares in 1987 and 1986	**1,295**	1,295
Additional paid-in capital	**11,047**	11,047
Retained earnings	**6,255**	5,121
	18,597	17,463
Less treasury stock at cost, 707,258 shares in 1987 and 1986	**6,993**	6,993
Total stockholders' equity	**11,604**	10,470
Commitments (note 7)		
	$38,738	$34,045

Consolidated Statements of Earnings

(thousands of dollars, except per share amounts)

Years ended December 31,	1987	1986	1985
Net sales	**$57,068**	$47,223	$52,993
Cost of sales	**41,492**	32,693	36,521
Gross profit	**15,576**	14,530	16,472
Selling, general and administrative expenses	**10,856**	9,362	8,497
Operating income	**4,720**	5,168	7,975
Other income (expense):			
Interest expense	**(1,606)**	(950)	(1,746)
Amortization of cost in excess of fair value of net assets of subsidiaries acquired	**(182)**	(158)	(140)
Miscellaneous — net	**188**	78	41
Earnings before income taxes	**3,120**	4,138	6,130
Income tax expense (note 5):			
Current	**1,638**	1,956	2,917
Deferred	**(210)**	83	(8)
	1,428	2,039	2,909
Net earnings	**$ 1,692**	$ 2,099	$ 3,221
Net earnings per common share	**$ .38**	$ .43	$ .73

Consolidated Statements of Stockholders' Equity

(thousands of dollars, except per share amounts)

	Common Stock	Additional Paid-in Capital	Retained Earnings	Treasury Stock	Total Stockholders' Equity
Balance at December 31, 1984	$ 1,212	$ 4,227	$10,140	$ —	$15,579
Net earnings	—	—	3,221	—	3,221
Redemption of common stock (note 8)	—	—	—	(21,971)	(21,971)
Common stock issued (note 8):					
Private placement	323	9,306	—	—	9,629
Public offering	—	(1,690)	—	9,803	8,113
Dividends declared ($ .125 per share)	—	—	(533)	—	(533)
Balance at December 31, 1985	1,535	11,843	12,828	(12,168)	14,038
Net earnings	—	—	2,099	—	2,099
Retirement of treasury stock	(343)	(2,641)	(9,184)	12,168	—
Common stock issued (note 2)	103	2,603	—	—	2,706
Redemption of common stock (note 9)	—	(758)	—	(6,993)	(7,751)
Dividends declared ($ .125 per share)	—	—	(622)	—	(622)
Balance at December 31, 1986	1,295	11,047	5,121	(6,993)	10,470
Net earnings	—	—	1,692	—	1,692
Dividends declared ($ .125 per share)	—	—	(558)	—	(558)
Balance at December 31, 1987	$ 1,295	$11,047	$ 6,255	$(6,993)	$11,604

See accompanying notes to consolidated financial statements.

Consolidated Statements of Changes in Financial Position

(thousands of dollars, except per share amounts)

Years ended December 31,	1987	1986	1985
Sources of working capital			
Net earnings	$ 1,692	$ 2,099	$ 3,221
Items which do not use (provide) funds:			
Depreciation and amortization	2,531	2,074	1,775
Deferred income tax expense (benefit)	(210)	83	(8)
Working capital provided by operations	4,013	4,256	4,988
Decrease in construction fund	—	242	828
Retirement of property, plant and equipment	49	129	80
Proceeds from long-term debt	6,966	12,767	24,536
Issuance of common stock	—	2,706	17,742
Increase in deferred liability	338	250	115
Decrease in working capital	—	—	2,408
	$11,366	$20,350	$50,697
Uses of working capital			
Additions to property, plant and equipment	$ 3,552	$ 2,212	$ 2,919
Acquisitions of patents	1,158	1,251	—
Acquisition of net assets of subsidiaries, excluding working capital acquired	—	557	—
Current installments and retirement of long- term debt	6,138	5,579	24,684
Redemption of common stock	—	7,751	21,971
Dividends declared	558	622	533
Increase in working capital	271	1,639	—
Other	(311)	739	590
	$11,366	$20,350	$50,697
Changes in components of working capital			
Increase (decrease) in current assets:			
Cash and cash equivalents	$ (121)	$ 100	$ (9)
Trade receivables	2,943	(1,061)	(316)
Costs and estimated earnings in excess of billings on uncompleted contracts	(88)	(525)	(116)
Inventories	(300)	(738)	(919)
Prepaid expenses and other current assets	9	(41)	18
	2,443	(2,265)	(1,342)
Increase (decease) in current liabilities:			
Note payable to bank	110	(70)	(150)
Current installments of long-term debt	151	56	219
Accounts payable	1,450	(132)	(413)
Accrued payroll, bonus and employee benefit plan contributions	403	(641)	32
Billings in excess of costs and estimated earnings on uncompleted contracts	221	(179)	292
Federal and state income taxes payable	54	132	16
Other accrued liabilities	(217)	189	21
Reserve for loss on long-term contracts	—	(1,110)	1,049
	2,172	(1,755)	1,066
Working capital of subsidiaries acquired	—	2,149	—
Increase (decrease) in working capital	$ 271	$ 1,639	$(2,408)

See accompanying notes to consolidated financial statements.

Notes to Consolidated Financial Statements

Years ended December 31, 1987, 1986, 1985

1. Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements of the Company include the accounts of Harmon Industries, Inc. and its wholly-owned subsidiaries, Harmon Electronics, Inc., Modern Industries, Inc. (Modern), Electro Pneumatic Corporation (EPC), Consolidated Asset Management Company, Inc. (CAMCO), and an 80% owned subsidiary, Cedrite Technologies, Inc. (Cedrite). Significant intercompany accounts and transactions have been eliminated in consolidation.

Nature of Business

The Company principally serves the railroad industry. It is engaged in the design, production and distribution of railroad crossing warning systems, train traffic control systems and radio communication equipment.

Inventory Valuation

Inventories are valued primarily at the lower of cost (first-in, first-out) or market (net realizable value). The components of cost are labor, materials and an allocation of manufacturing overhead.

Property, Plant and Equipment

Buildings, machinery and equipment, office furniture and equipment, transportation equipment and leasehold improvements are being depreciated or amortized using the straight-line method over the estimated useful lives of the assets, which range from two to thirty-three years. Maintenance and repairs are charged to operations as incurred. Renewals and betterments are capitalized as additions to the appropriate asset accounts. Upon sale or retirement of assets, the cost and related accumulated depreciation applicable to such assets are removed from the accounts, and any resulting gain or loss is reflected in operations.

Income Taxes

Deferred income taxes are the result of timing differences in recognizing some items of expense for financial reporting purposes in periods which differ from the recognition for income tax purposes.

Investment tax credits in 1985 were accounted for as a reduction of the provision for income taxes in the year the related asset was placed in service.

Long-term Contracts

Profits on long-term contracts are recorded on the basis of the Company's estimates of the percentage of completion of individual contracts. That portion of the total contract price is accrued which is allocable, on the basis of the Company's engineering estimates of the percentage of completion, to contract expenditures incurred. Profits are not recorded during the start-up phase of the contract, which has been determined by the Company to approximate the initial 15% of design and construction. All losses are recognized in the period during which they become evident.

Cost in Excess of Fair Value of Net Assets Acquired

Cost in excess of the fair value of net assets acquired is amortized on a straight-line basis over ten years.

Interest Capitalization

The Company capitalizes interest costs on funds borrowed to finance the construction of major facilities. Interest expense of $54,000 was capitalized during the year ended December 31, 1985.

Patents

The cost of patents acquired is being amortized on a straight-line basis over the estimated remaining economic lives of the respective patents, which is less than the statutory life of each patent.

Research and Development
Costs incurred in the creation and start-up of new products or in changing existing products are charged to expense as incurred. Such costs amounted to approximately $3,318,000, $2,360,000 and $2,095,000 for the years ended December 31, 1987, 1986 and 1985, respectively.

Earnings per Common Share
Earnings per common share are based on the weighted average number of common shares outstanding.

2. Acquisitions
On July 9, 1987, the Company acquired for $150,000 in cash 80% of the issued and outstanding common stock of SNP, Inc., subsequently reorganized as Cedrite Technologies (Cedrite). Cedrite, an Oregon corporation, is a development stage enterprise formed to manufacture and market composite railroad ties developed with certain patented technologies owned by Cedrite.

Harmon Industries, Inc. has negotiated a $3,500,000 line of credit in order to fund working capital requirements of Cedrite during the development stage. In addition, Cedrite has obtained a $5,400,000 line of credit to fund the acquisition of equipment required for operations (see note 4). Cedrite had no significant operations prior to acquisition; therefore pro forma financial information would not be meaningful.

Cedrite has also entered into a 20 year development and lease agreement with an investment company to construct Cedrite's primary operating facility. This lease will be capitalized for financial reporting purposes upon completion and delivery of the facility. Upon occupancy, Cedrite is obligated to make monthly rental payments of $26,250.

As of July 31, 1986, the Company acquired Modern Industries, Inc. (Modern), a Kentucky corporation manufacturing railroad safety equipment and providing design and installation services to the railroad industry.

All of Modern's stock was exchanged for 409,998 shares of previously unissued common stock of the Company, with a fair market value of $2,706,000. The fair market value of the Company's common stock issued was determined by independent valuation. This business combination was accounted for as a purchase. The purchase price was allocated to the net assets acquired in relation to their fair values. The allocation of purchase price is presented below (thousands of dollars):

Allocation of purchase price	
Current assets	$ 3,891
Current liabilities	1,742
Working capital acquired	2,149
Property, plant and equipment	557
Total purchase price	$ 2,706

The results of operations of Modern since the date of acquisition have been included in the Company's consolidated statements of earnings for the years ended December 31, 1987 and December 31, 1986.

On February 7, 1986, the Company purchased for $1,500,000 certain patents, machinery, equipment and inventory relating to railroad fuel management and train data systems.

As of July 15, 1986, the Company purchased for $600,000 26.2% of the common stock of Phoenix Data, Inc., a manufacturer of analog-to-digital conversion devices for the aerospace and defense industries. During the year ended

Notes to Consolidated Financial Statements

Years ended December 31, 1987, 1986, 1985

2. Acquisitions, continued

December 31, 1987, the Company purchased for $81,250 an additional 5.0% of the common stock, bringing its total ownership percentage to 31.2%. The Company, as part of the 1986 acquisition, has an obligation to acquire the remaining shares of common stock as of January 1, 1989, if certain requirements are met by Phoenix Data, Inc. The investment in Phoenix Data, Inc. is accounted for on the equity method.

3. Contracts in Progress

	Costs and estimated earnings in excess of billings	Billings in excess of costs and estimated earnings	Total
	(Thousands of dollars)		
December 31, 1987:			
Costs and estimated earnings	$1,323	$5,395	$6,718
Billings	1,179	5,808	6,987
	$ 144	$ (413)	$ (269)
December 31, 1986:			
Costs and estimated earnings	$2,347	$2,993	$5,340
Billings	2,115	3,185	5,300
	$ 232	$ (192)	$ 40

All receivables on contracts in progress are considered to be collectible within twelve months.

4. Indebtedness

	December 31, 1987	1986
	(Thousands of dollars)	
Short term debt:		
Note payable to bank under lines of credit	$ 555	$ 445
Long term debt and capitalized lease obligations:		
Note payable to bank under working capital loan	$ 4,900	$ 5,515
Note payable to bank under fixed asset loan	3,681	4,643
Note payable to bank under Cedrite working capital loan	1,364	—
Note payable to bank under Cedrite equipment loan	1,056	—
9% Subordinated convertible debentures	2,100	2,100
Industrial revenue bonds	1,561	1,847
Capitalized lease obligations	569	525
Secured notes payable	1,126	732
Unsecured note payable	39	55
Total long-term debt and capitalized lease obligations	16,396	15,417
Less current installments of long-term debt and capitalized lease obligations	1,775	1,624
Long-term debt and capitalized lease obligations, excluding current installments	$14,621	$13,793

In 1985, the Company entered into a secured credit agreement under which the Company borrowed sufficient funds to allow for the redemption of the shares of common stock held by SAB NIFE AB (see note 8) and the refinancing of certain prior bank loans. These loans are secured by liens against the Company's inventories, receivables, contract rights, and other tangible and intangible properties, both real and personal.

The working capital loan is a 30-day demand note, which comes due on January 2, 1992, unless prior demand is made, and bears interest at a base rate established by the bank plus 1% (9.75% at December 31, 1987). The bank has waived the right to demand payment until January 2, 1992, unless an event of default occurs and, accordingly, the working capital loan has been classified as long term debt. The amount available under the working capital loan is limited to the sum of 85% of eligible accounts receivable and 60% of eligible inventory, but in no event more than $13,000,000. The Company had unused working capital loan availability under this agreement of $5,400,000 at December 31, 1987.

The fixed asset loan bears interest at a base rate established by the bank plus 1% (9.75% at December 31, 1987) with monthly payments of $113,000, including interest, through June 1, 1992.

As part of the acquisition of Cedrite Technologies (see note 2), Harmon Industries, Inc. obtained a working capital loan to fund development stage activities. The loan comes due in monthly installments beginning August 2, 1989. Interest accrues at a base rate established by the bank plus 1% (9.75% at December 31, 1987). The loan is collateralized by all tangible and intangible assets of the Company. The unused working capital loan availability under this agreement was $2,136,000 at December 31, 1987.

In addition, Cedrite obtained an equipment loan. The loan makes funds available to purchase equipment for Cedrite's operations. The equipment loan bears interest at the base rate established by the bank plus 1% (9.75% at December 31, 1987). Principal is due in monthly installments beginning October 15, 1988. The loan is secured by all equipment of Cedrite. Cedrite had unused equipment loan availability of $4,344,000 at December 31, 1987.

On December 31, 1986, the Company issued 9% subordinated convertible debentures (without sinking fund) in the amount of $2,100,000 and due December 31, 1996. Interest payments are due at the end of each calendar quarter.

The debentures can be converted into the Company's common stock at a price of $9.25 per share, subject to adjustments, if any, for stock dividends or split-ups. The debentures became callable by the Company at 109% of par value at December 31, 1987, decreasing one per cent per annum through December 31, 1996, provided that prior to January 1, 1990 the debentures are not callable, unless the bid price of the Company's common stock for any 20 trading days within a consecutive period of 30 trading days ending not more than five trading days prior to the date of notice of redemption is at least 150% of the conversion price, as adjusted.

The debenture agreement includes a covenant that would prevent the Company from paying cash dividends on its common stock for the period commencing at the end of the third consecutive quarter in which the Company has experienced net losses and continuing until the Company has achieved three consecutive quarters of net earnings or until subsequent cumulative net earnings have exceeded the cumulative quarterly losses, whichever period is shorter.

Two series of industrial revenue bonds were issued to provide funds to construct and equip manufacturing and research and development facilities. One series of bonds, bearing interest at 73% of the prevailing prime commercial rate, not less than 7.5% (7.5% at December 31, 1987 and 1986), matures in annual installments of $140,000 plus interest through 1995. The second series of bonds, which provides for the lease of the facilities to the Company by the issuers, bears interest at 10% and matures in annual installments of $150,000 plus interest, through 1990. The lease contains a bargain purchase option which management intends to exercise

Notes to Consolidated Financial Statements

Years ended December 31, 1987, 1986, 1985

4. Indebtedness, continued

and, accordingly, the lease has been accounted for as a purchase. The bonds are secured by buildings and equipment with a depreciated cost of $3,364,000, and land with a cost of $164,000 at December 31, 1987.

The various indebtedness agreements contain, among other things, covenants relating to: restrictions on expenditures or commitments for fixed assets in excess of the greater of $2,500,000 per year, exclusive of expenditures related to Cedrite, or 65% of net earnings less dividends paid plus depreciation; maintenance of a positive net worth; maintenance of a minimum working capital of $3,000,000; a maximum ratio of debt to equity of 4.0 to 1 through 1990; and, a limitation on the payment of dividends to 50 percent of net earnings. The Company was in compliance with all such covenants at December 31, 1987.

The capitalized lease obligations have implicit interest rates ranging from approximately 8.9% to 10.50%, and are due in monthly installments, including interest, of $4,421 through 1989 and $104,060 through 1991. They are secured by related office equipment with a depreciated cost of $431,239 at December 31, 1987.

The Company's secured notes payable bear interest at prime, prime plus .75%, 9.15%, 9.875%, and 13% and are due in monthly principal and interest installments of $7,703, monthly installments of $16,258 plus interest from March 1989 through November 1991 and in a lump sum payment of $482,000 in 1992. The notes are secured by various equipment with a depreciated cost of $1,324,000 at December 31, 1987.

The Company's unsecured note payable bears interest at 8% and is due in monthly installments of $1,638, including interest, through March 1990.

At December 31, 1987, long-term debt maturities and future minimum principal payments under capitalized lease obligations for 1988 through 1992 are:

Year Ended December 31	Thousands of Dollars
1988	$1,775
1989	2,081
1990	2,110
1991	878
1992	6,979

Modern has working capital and equipment lines of credit with a bank totalling $1,500,000 which are collateralized by inventories and equipment and accrue interest at the prime rate (8.75% at December 31, 1987). Borrowings on the lines of credit at December 31, 1987 amounted to $555,000.

On December 29, 1986, the Company was extended a $2,000,000 line of credit with outstanding borrowings accruing interest at a base rate established by the bank plus 1% (9.75% at December 31, 1987). This line of credit is secured by 480,231 shares of treasury stock. There were no outstanding borrowings under this line of credit at December 31, 1987.

5. Income Taxes

Income tax expense (benefit) consisted of the following components for the years ended December 31, 1987, 1986 and 1985:

	Years ended December 31, 1987	1986	1985
	(Thousands of dollars)		
Current:			
Federal	**$1,540**	$1,815	$2,741
State	**98**	141	176
Total current	**1,638**	1,956	2,917
Deferred:			
Federal	**(187)**	75	(7)
State	**(23)**	8	(1)
Total deferred	**(210)**	83	(8)
Total income tax expense	**$1,428**	$2,039	$2,909

Income tax expense for the years ended December 31, 1987, 1986 and 1985 resulted in effective tax rates of 45.8%, 49.3% and 47.5%, respectively. Effective rates differ from the statutory Federal income tax rate of 40% in 1987 (46% for years ended December 31, 1986 and 1985) because of the following:

	Years ended December 31,					
	1987		1986		1985	
	Amount	Percent	Amount	Percent	Amount	Percent
	(Thousands of dollars)					
"Expected" tax expense at statutory rate	**$ 1,248**	**40.0%**	$ 1,903	46.0%	$ 2,820	46.0%
Investment tax credit	**—**	**—**	—	—	(59)	(1.0)
State taxes, net of Federal income tax benefit	**45**	**1.5**	80	1.9	98	1.6
Amortization of cost in excess of acquired net assets	**73**	**2.3**	63	1.5	65	1.1
Other	**62**	**2.0**	(7)	(.1)	(15)	(.2)
	$ 1,428	**45.8%**	$ 2,039	49.3%	$ 2,909	47.5%

Deferred income tax expense (benefit) for the years ended December 31, 1987, 1986 and 1985 consisted of the following:

Years ended December 31,	**1987**	1986	1985
		(Thousands of dollars)	
Deferred taxes on timing differences:			
Depreciation	**$ 99**	$ 205	$ 162
Deferred compensation	**(135)**	(115)	(53)
Other	**(174)**	(7)	(117)
	$ (210)	$ 83	$ (8)

6. Business Segment Information

The Company and its subsidiaries operate in one reportable segment, as defined under Financial Accounting Standards Board Statement No. 14, "Financial Accounting for Segments of a Business Enterprise." That segment consists of various products sold primarily to the railroad industry.

Four customers accounted for approximately $8,557,000, $7,602,000, $6,340,000 and $5,864,000 of net sales during the year ended December 31, 1987. Three customers accounted for approximately $7,358,000, $6,105,000 and $5,546,000 of net sales during the year ended December 31, 1986. Three customers accounted for approximately $8,644,000, $7,643,000 and $7,153,000 of net sales during the year ended December 31, 1985.

7. Commitments and Deferred Liability

Leases

The Company has entered into various lease arrangements covering the use of certain manufacturing facilites, sales offices and equipment, all of which are treated as operating leases. Rental expense related to these leases amounted to $897,000, $906,000 and $707,000 for the years ended December 31, 1987, 1986 and 1985 respectively. Included in rental expense is expense relating to the lease of administrative office space from a director of the Company at a monthly rate ranging from $900 to $1,500 during the period 1985 through 1987. This lease expires on December 31, 1989.

A summary of noncancellable long-term lease commitments follows:

Notes to Consolidated Financial Statements

Years ended December 31, 1987, 1986, 1985

7. Commitments and Deferred Liability, continued

Years ended December 31,	Asset leased Equipment	Asset leased Real property	Total Commitments
		(Thousands of dollars)	
1988	$168	$510	$678
1989	157	373	530
1990	85	210	295
1991	14	11	25
1992	—	11	11
1993-2001	—	27	27

It is expected that in the normal course of business, leases that expire will be renewed or replaced by leases on other properties; thus, it is anticipated that future minimum lease commitments will not be less than the amounts shown for 1988.

Employee Benefits

Prior to June 17, 1985, Harmon Industries, Inc. had a contributory profit sharing plan for all employees who were at least 18 years of age and who had completed six months employment, consisting of at least 1,000 hours service. On June 17, 1985, this plan was amended and converted into an employee stock ownership plan and trust (ESOT). Employer contributions to the ESOT are based on a percentage of pretax earnings. The ESOT has purchased certain Common Stock of the Company (see notes 8 and 9).

ESOT contributions charged to operating expense were $597,000, $763,000 and $713,000 for the years ended December 31, 1987, 1986 and 1985, respectively.

The Company also has an executive bonus plan the contributions of which are based on a percentage of pretax earnings after employee profit sharing (ESOT) contributions. Accruals made under this plan were $204,000, $238,000 and $361,000 for the years ended December 31, 1987, 1986 and 1985, respectively.

The Company has a nonqualified, unfunded deferred compensation plan and trust for certain key executives providing for payments upon retirement, death or disability. Under the plan, certain employees receive retirement payments equal to a portion of the last three years' average compensation. These payments are to be made for the remainder of the employees' life with a minimum payment of ten years' benefits to either the employee or his beneficiary. The plan also provides for reduced benefits upon early retirement, disability, or termination of employment. The deferred compensation expense was $338,000, $250,000 and $115,000 for the years ended December 1987, 1986 and 1985, respectively.

8. SAB NIFE AB Redemption

On June 18, 1985, the Company purchased all of the 2,476,528 outstanding shares of the Company's common stock which were held by SAB NIFE AB (Nife) (representing 51.1% of the shares outstanding) at a price of $8.82 per share (total purchase price of $22,937,000 including fees). The purchase price and related fees were financed through various new indebtedness, the establishment and issuance of stock to an employee stock ownership plan and trust (ESOT) and the issuance of stock to a private investor. In conjunction with this transaction, the Company's existing financing, consisting of notes payable to bank under the revolving and term loan agreements, was refinanced (see note 6).

Fees relating to the redemption have been capitalized and classified according to the components and activities to which they were related. These fees have been classified as follows: prepaid expense and other assets for fees relating to short-term and long term indebtedness, ($406,000 and $349,000 respectively); a reduction of

additional paid-in capital for fees relating to common stock issuance ($211,000); and, a cost of treasury stock for fees relating to the redemption of common stock held by Nife ($128,000).

On June 18, 1985, the ESOT purchased 258,065 shares of common stock at a price of $7.75 per share (total purchase price of $2,000,000). Transferability of such shares is restricted.

On June 18, 1985, the Company sold 1,032,258 shares of common stock to a private investor at a price of $7.595 per share (total purchase price of $7,840,000). The stock was restricted as to transferability and callable by the Company at a redemption price ranging from approximately $7.95 to $11.16 per share during the period from June 18, 1985 through June 17, 1987. On June 18, 1987, if the stock had not been called, the Company was contingently obligated to pay in cash the amount, if any, by which 90% of the market price of the common stock was less than $11.16 per share, or at its option to issue 20% convertible preferred stock with an aggregate par value equal to 110% of the required cash payment (see note 9).

9. Equity Transactions

During 1986, the Company exercised its right to call certain restricted shares owned by a private investor (see note 8). On May 16, 1986, the Company's ESOT purchased 75,000 shares of this stock for $9.54 a share or $715,500. Also, on November 16, 1986, the Company purchased 707,258 shares of this stock for $9.88 a share or $6,993,013 and paid $721,875 on the remaining 250,000 shares owned by the investor in order to cancel and terminate certain rights with respect to such shares.

Auditors' Report

The Board of Directors and Stockholders
Harmon Industries, Inc. and Subsidiaries:

We have examined the consolidated balance sheets of Harmon Industries, Inc. and Subsidiaries as of December 31, 1987 and 1986 and the related consolidated statements of earnings, stockholders' equity and changes in financial position for each of the years in the three year period ended December 31, 1987. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned financial statements present fairly the consolidated financial position of Harmon Industries, Inc. and Subsidiaries at December 31, 1987 and 1986 and the results of their operations and the changes in their financial position for each of the years in the three year period ended December 31, 1987, in conformity with generally accepted accounting principles applied on a consistent basis.

PEAT MARWICK MAIN & CO.

Kansas City, Missouri
February 5, 1988

Investor Information

Transfer Agent
United Missouri Bank of Kansas City, N.A.
10th & Grand
P.O. Box 410064
Kansas City, Missouri 64141-0064
☎ 816–556-7445

For change of address, lost dividends, or lost stock certificates, write or call the above and address your inquiry to: Securities Transfer Division.

Analyst Contact
Security analyst inquiries are welcomed. Please call
Mr. Vincent D. Burget,
Vice President – Corporate Affairs, at
☎ 816–229-3345.

Stock Trading
The Company's common stock is traded in the over-the-counter market, and it is quoted on the NASDAQ National Market System under the symbol HRMN. Stock price quotations can be found in major daily newspapers and in the *The Wall Street Journal*.

At March 4, 1988, the following securities firms were making a dual auction market in the Company's common stock:

George K. Baum & Company
Lowell H. Listrom & Co.
Dean Witter Reynolds Inc.
Merrill Lynch Pierce Fenner & Smith Inc.
Rodman & Renshaw Inc.
Stern Brothers & Co.

Annual Meeting
The Company's annual meeting of stockholders will be held at 2:00 p.m., Tuesday, May 3, 1988, at Cedrite Technologies, Inc., 10 Berger Avenue, Kansas City, Kansas. All shareholders and any other interested parties are cordially invited to attend.

The meeting notice and proxy materials were mailed to each shareholder with a copy of this annual report. For those shareholders unable to attend the meeting, we urge them to vote their proxies and thus participate in the decisions that will be made at the annual meeting.

Common Stock and Dividend Information
At December 31, 1987, there were 4,471,587 shares outstanding and approximately 750 shareholders of record of Harmon's common stock. Cash dividends are traditionally paid in April and October to shareholders of record approximately two weeks prior. Stock dividends are paid irregularly and at the discretion of the Board of Directors.

The following table sets forth for the periods indicated the cash dividends paid per share of common stock and the high and low bid prices in each of the quarters in the past two years ended December 31, 1987. Price per share and cash dividends have been adjusted for all stock splits and stock dividends.

	Dividends Per Share	Price Range High	Price Range Low
Fiscal 1987			
1st quarter ended March	$ .06¼	8½	6⅞
2nd quarter ended June	—	7⅛	6
3rd quarter ended September	.06¼	7⅞	6¼
4th quarter ended December	—	7¾	5
	$ .12½		
Fiscal 1986			
1st quarter ended March	$ .06¼	11¾	9½
2nd quarter ended June	—	11¾	8¾
3rd quarter ended September	.06¼	9⅞	7⅛
4th quarter ended December	—	8	6⅝
	$ .12½		

Form 10-K
A copy of the Form 10-K, the Company's annual report that is filed with the Securities and Exchange Commission, will be sent free to any shareholder upon written request.

Write to: Mr. Vincent D. Burget,
Vice President – Corporate Affairs
Harmon Industries, Inc.
P.O. Box 1570
Blue Springs, Missouri 64015

Corporate Data

Officers

Robert E. Harmon
Chairman, President

Charles M. Foudree
Executive Vice President-Finance,
Treasurer and Secretary

Ronald G. Breshears
Vice President-
Human Resources

Vincent D. Burget
Vice President-
Corporate Affairs

Robert G. Clawson
Vice President-
Sales & Marketing

Robert E. Heggestad
Vice President-Technology

Stephen L. Schmitz
Vice President, Controller

Subsidiary Presidents

Electro Pneumatic Corporation
Richard E. Risely, President

Harmon Electronics, Inc.
James P. Lemieux, President

Modern Industries, Inc.
Charles R. Tucker, President

CAMCO, Inc.
James R. Meyer, President

Cedrite Technologies, Inc.
James D. Schembs, President

Directors

Robert E. Harmon
Chairman of the Board,
President
Harmon Industries, Inc.

Densil Allen, retired
Former Vice President
Unitog Company
Industrial Uniform
Manufacturer

Charles M. Foudree
Executive Vice President-Finance,
Treasurer, Secretary
Harmon Industries, Inc.

Robert C. Harmon, retired
Harmon Industries, Inc.
Founder of the Company

Herbert M. Kohn
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Warrensburg, Missouri (2)

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Modern Industries, Inc.
Louisville, Kentucky
Jacksonville, Florida

Cedrite Technologies, Inc.
Kansas City, Kansas

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DESIGN, PHOTOGRAPHY AND PRINTING: ANNUAL REPORTS, INC., FRANKLIN, INDIANA

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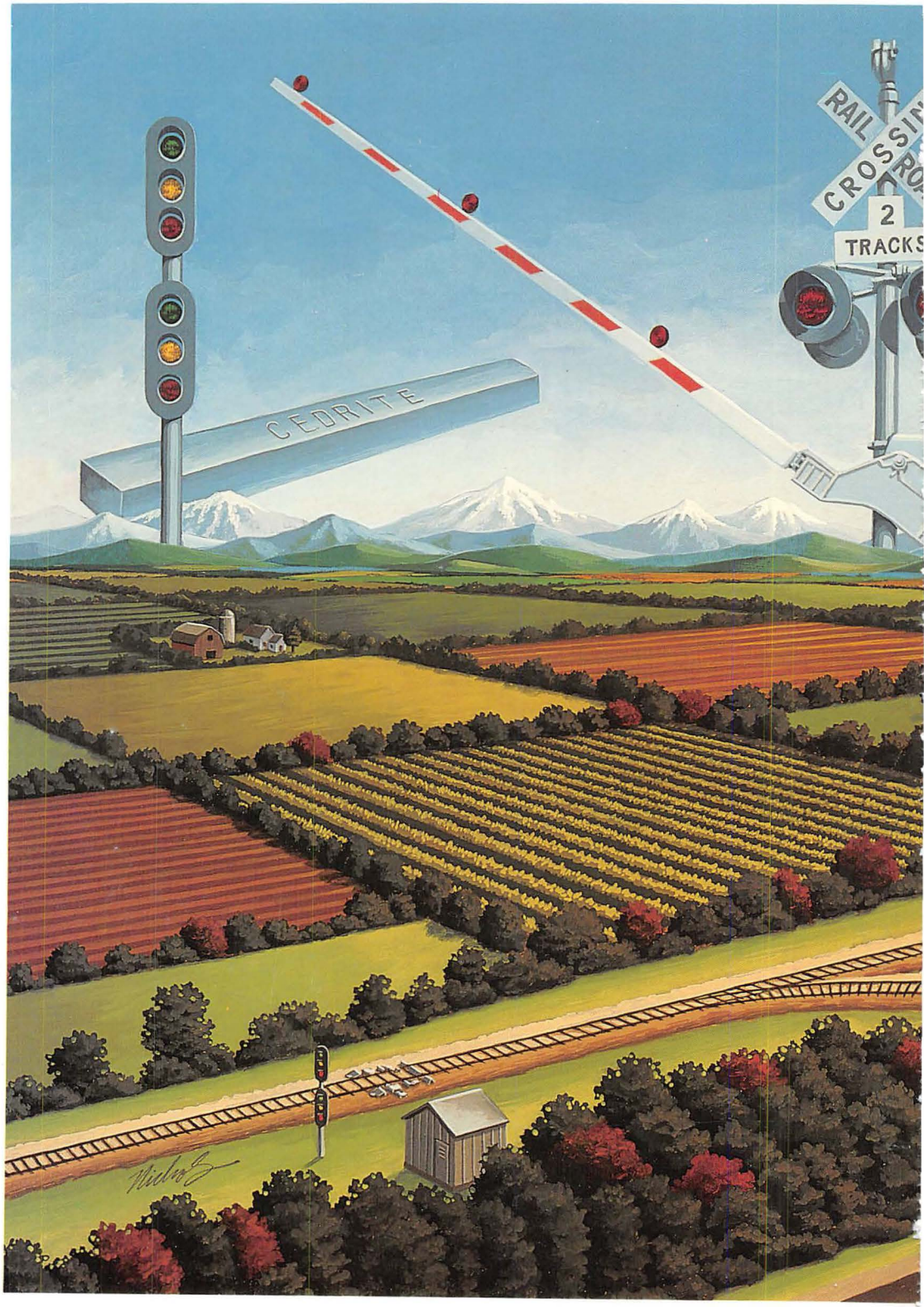

Harmon Industries, Inc.

1988 Annual Report

Harmon is one of the premier suppliers of railroad communication and control products in North America. It manufactures an extensive line of railroad signal and communication equipment, traffic control systems, grade crossing hardware, and allied components. It is presently outfitting a plant to manufacture reconstituted railroad ties under a unique process that uses old, discarded ties as a base material.

Harmon also provides storage for commonly-used railroad equipment made by Harmon and others, giving its customers a single source for rapid delivery of needed equipment. In addition, Harmon makes sophisticated data acquisition and analysis systems for industrial, scientific and military uses.

Harmon is innovative and heavily engineering oriented. Its products provide cost cutting electronic solutions to mechanical signal and control problems confronting the railroad industry.

Harmon is headquartered in Blue Springs, Missouri, a suburb of Kansas City. It operates from ten facilities. Four are in Missouri, and there is one each in Kansas City, Kansas; Riverside, California; Phoenix, Arizona; Griffin and Waycross, Georgia; and Jacksonville, Florida.

Harmon common stock is traded in the over-the-counter market. Its shares are quoted on the NASDAQ National Market System under the symbol HRMN.

Cash dividends were instituted in 1978. Since then, the dividend has been increased twice. The current annual dividend is 12 $^{1}/_{2}$ cents per share, which is paid semi-annually at the rate of 6 $^{1}/_{4}$ cents per share.

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Cover Photo: *AMTRAK signal construction crew member installs Modern Industries' signal heads on the Philadelphia to Atlantic City project. Almost every Harmon subsidiary has contributed products to this major project.*

Years ended December 31,	*1988*	*1987*	*1986*
Net sales	$64,558,000	$57,068,000	$47,223,000
Expenses	$60,792,000	$53,948,000	$43,085,000
Income taxes	$ 1,280,000	$ 1,428,000	$ 2,039,000
Net income	$ 2,486,000	$ 1,692,000	$ 2,099,000
Net income per share	$ .55	$ .38	$ .43
Dividends per share	$ .125	$ .125	$ .125
Return on sales	3.9%	3.0%	4.4%
Return on year-end equity	18.3%	14.6%	20.0%
At year-end			
Working capital	$ 7,037,000	$11,870,000	$11,599,000
Long-term debt	$14,400,000	$14,621,000	$13,793,000
Approximate number of shareowners [1]	746	746	750
Number of employees	821	731	751
Outstanding shares [2]	4,477,747	4,471,587	4,471,587

[1] Includes only registered shareholders. Since a number of shareholders hold their shares in "street name," the number of individual shareholders is undoubtedly larger than the amount shown.

[2] The Phoenix Data, Inc. acquisition and payment of officers' stock bonuses raised the number of oustanding shares to 4,632,877 as of March 1, 1989.

Robert E. Harmon

Chairman of the Board

and President

Sales increased 13 percent to $65 million; earnings gained 47 percent to $2.5 million net. If sales and earnings are the measure, then 1988 can be summed up in one sentence—Our veterans performed magnificently; our new recruits needed more seasoning.

Our veteran subsidiaries, Harmon Electronics, Inc. and Electro Pneumatic Corporation, broke all previous sales and earnings records. They were responsible for the increase in corporate sales. They produced the increase in earnings. There is no magic to their success. Their sales are up because the railroads prefer their products. Their profit margins are better because these two subsidiaries keep finding ways to reduce their costs.

Our recent additions, Cedrite Technologies, Inc., Consolidated Asset Management Company, Inc. (CAMCO), and Modern Industries, Inc. did not come along as fast as I had anticipated. As a result, our earnings were considerably less than what they would have been had we not owned them. Here is their current status:

• **Cedrite.** Production is stalled on our revolutionary reconstituted railroad tie because the huge presses installed last year are bending slightly, indicating a potential structural problem in the future. It's an engineering problem, and we are working closely with the mechanical contractor to reach a solution. The contractor has brought in crews to work around the clock to get the presses up and running. I am hopeful we can be in limited production within three months, but I cannot speak with certainty. In the meantime, our operating costs are running about $200,000 a month.

Our customers, which have bought out our first two years of production, have been supremely patient. They voluntarily extended their delivery deadlines. This generosity illustrates the supportive nature of railroading, which gives encouragement to industry innovators.

• **CAMCO.** This is one of the nation's first service organizations that maintains an inventory of commonly-used railroad equipment and supplies for its customers. Identifying needed parts and working out stocking arrangements took six to nine months longer than initially projected. As a result, we were not operational until October, 1988, and we recorded a minor loss on the year. Since that time, orders have increased substantially.

• **Modern Industries.** Modern encountered several problems last

year not of its own making. Defects came to light in cantilevers and other products that were manufactured prior to Harmon's ownership. Customers needed solutions, and even though it was very expensive, we repaired the faulty products. We've turned the whole matter over to our lawyers, and litigation is in process.

Last year, Modern also moved its Louisville, Kentucky, manufacturing operations to Griffin, Georgia. The move caused temporary disruptions in production, and profit margins suffered.

As of March 1, 1989, productivity had improved significantly. In addition, because of the problems encountered prior to Harmon's ownership, Modern designed a new cantilever from the ground up. It is superior to any cantilever on the market, and is more cost effective to manufacture.

Modern performs a vital function. It expands our products to a point where we can bid on installations without having to purchase major components from competitors. This keeps our costs down and our bids very competitive. Without Modern, it is arguable whether our veteran subsidiaries would have sold as much as they did last year, especially since many of Modern's jobs last year included products from the other subsidiaries.

On balance, 1988 was a mixed year. Our established businesses did very well, but our fledgling start-ups moved slower than projected and cost more money than anticipated. To some extent, it is a matter of perspective. Five years ago, Electro Pneumatic Corporation was a newcomer to Harmon. Its sales were quite modest, but we acquired them because they had a good product and excellent management. They have since become a major contributor to Harmon's sales and earnings. Over the same time frame we also developed and purchased other products that now comprise a substantial portion of our current sales.

In the past ten years, our sales increased from $12 million to nearly $65 million. Little, if any, of today's sales are derived from products we sold ten years ago. New ideas and the willingness to assume calculated risk propel this company, and are the cornerstones to our future growth. Phoenix Data, Inc., which we acquired early this year, exemplifies this spirit. It also has excellent products. We believe it will give us entry into other major electronics markets.

Admittedly, we have peaks and valleys, and there are always problems confronting us. Financing new ventures is costly and does depress current earnings. Yet, subsequent higher earnings have consistently been built on the new ventures of the past. Then again, orders fluctuate sharply. At the start of 1989, they were very weak. In mid-February, orders rebounded strongly.

I am an optimist—with good reason. We serve a very healthy industry. The railroads are quite profitable; their cash positions are generally excellent, and freight traffic is at record levels. It is an industry that has the capacity to make purchases. It is also an industry that seeks to modernize its operations through the purchase of cost-effective, automated equipment, which is precisely what we make. I could not ask for better conditions than these.

Robert E. Harmon
Chairman and President

Blue Springs, Missouri
March 3, 1989

A Florida East Coast Railway train heads north out of Miami and passes a trackside signal case. The case, one of many installed from Miami to Jacksonville, contains Electro Pneumatic's Electro Code 4 signal control track circuitry. It also houses Harmon Electronics' Phase Motion Detectors, which control rail/highway grade crossing warning signals.

AT YEAR-END 1988, HARMON INDUSTRIES, INC. (HARMON) OWNED five subsidiaries; four were in operation and the fifth was in a start-up development phase. In January, 1989, a sixth operating subsidiary, Phoenix Data, Inc. (PDI), was added to Harmon.

Current operating subsidiaries include Harmon Electronics, Inc., Electro Pneumatic Corporation (EPC), Modern Industries, Inc. (Modern), Consolidated Asset Management Company, Inc. (CAMCO), and PDI. All are wholly owned. The start-up subsidiary is Cedrite Technologies, Inc., which is 80% owned.

Harmon Electronics is the oldest, largest and most profitable subsidiary. It makes electronic controls for rail/highway grade crossings, communication and safety-related products, and traffic control systems. Its forte is delivering high-tech solutions to railroad problems. Its operations are conducted from four plants, all in Missouri. Harmon's principal research efforts are also conducted here. See pages 6-7.

EPC has grown rapidly in sales and profits since its acquisition in 1984. Its principal product lines, electronic track circuits and electronic interlockers, control the block signals that direct the movement of trains and the movement of switches and signal positions where two or more tracks intersect. See pages 8-9.

Modern, acquired in 1986, fabricates heavy metal cantilevers, trackside signal cases, and miscellaneous hardware commonly found at signal locations. It also installs and wires control equipment in its metal cases and ships the entire package as a system. It moved its manufacturing operations from Louisville, Ky. to Griffin, Ga. in 1988. See pages 10-11.

CAMCO is a service enterprise that began operation in early 1988. It inventories commonly-used railroad equipment and supplies at locations convenient to its customers. It is Harmon's smallest subsidiary. See pages 12-13.

Phoenix Data, acquired in early 1989, manufactures data acquisition and test measuring systems for industrial, scientific and military uses. See pages 18-19.

Cedrite has a patented technology to manufacture reconstituted railroad ties out of discarded conventional ties. It is presently bringing a modern plant on line to begin automated production. See pages 14-17. ■

Harmon's Locomotive Speed Limiter, installed on a Conrail locomotive. The speed limiter is a new product that automatically stops a locomotive if signals calling for reduced speed are overlooked or ignored by the locomotive engineer.

HARMON ELECTRONICS, THE COMPANY'S LARGEST SUBSIDIARY, experienced much higher sales and earnings in 1988. Sales were especially strong among products that traditionally obtain targeted profit margins. International sales, although still a small portion of total sales, bested all previous company records.

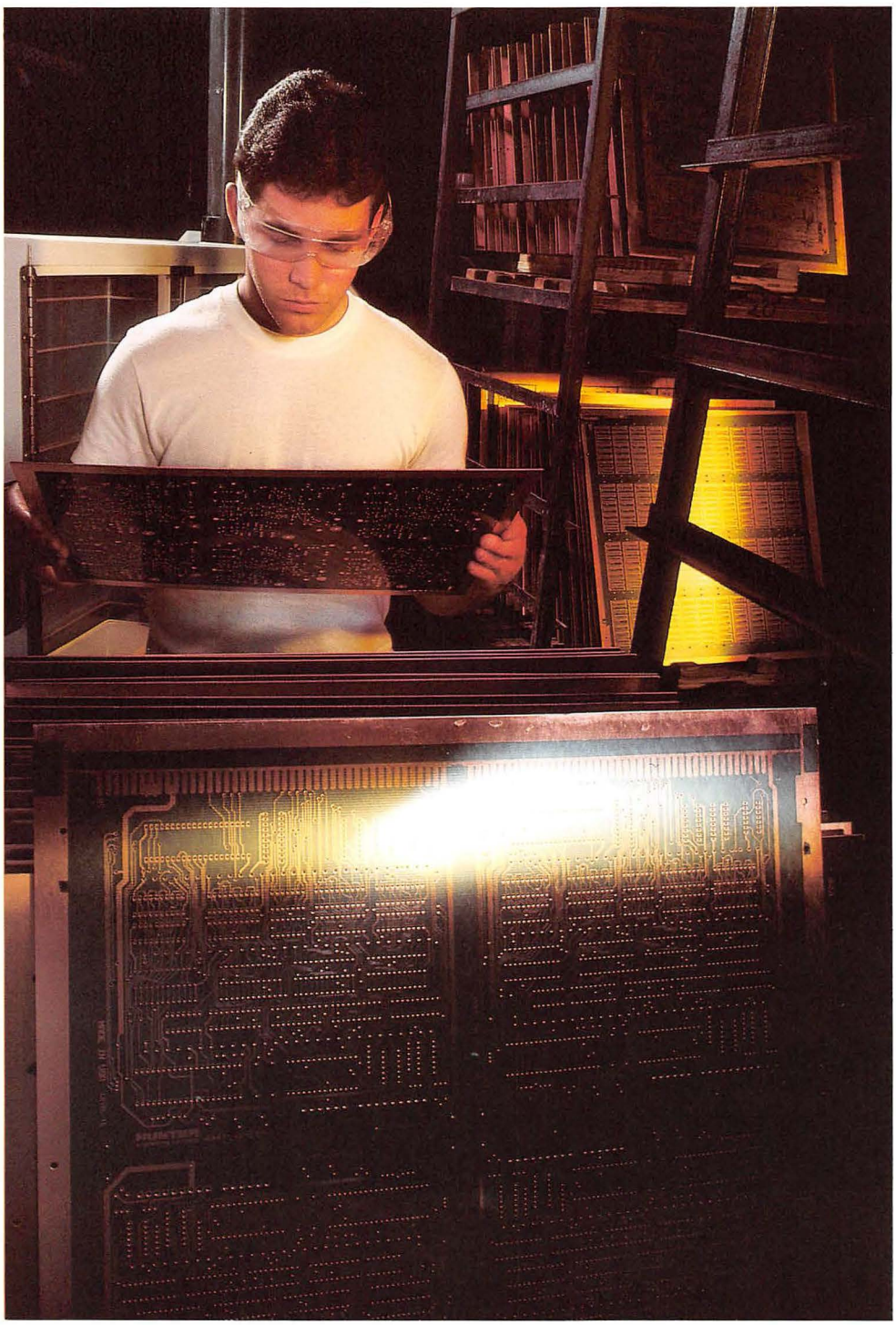
Productivity gains increased margins despite continuing strong price competition. Labor-saving product designs, ongoing additions of automated equipment, better product quality and improved shop control combined to reduce direct labor costs. In addition, material costs per dollar of sales declined over 3% last year. These manufacturing efficiencies were timely as a greater R&D commitment is becoming necessary because of growing product complexity and customer demand.

Major R&D investments were made for the development of Total Traffic Management Dispatch Office Systems (TTM), which set a standard in cost-effective train dispatching. TTM combines advanced ergonomic concepts with flexible computer architecture and true graphic work stations. Cost savings for railroads are substantial because much of the design is standardized, which reduces expensive customized engineering costs inherent in earlier forms of traffic control systems.

We expanded the capabilities of our Locomotive Speed Limiter and obtained excellent sales with this new safety device, which is federally mandated on the Northeast Corridor. We developed a cab signal receiver which, combined with the speed limiter, provides an all electronic automatic train control system for both conventional freight and transit applications.

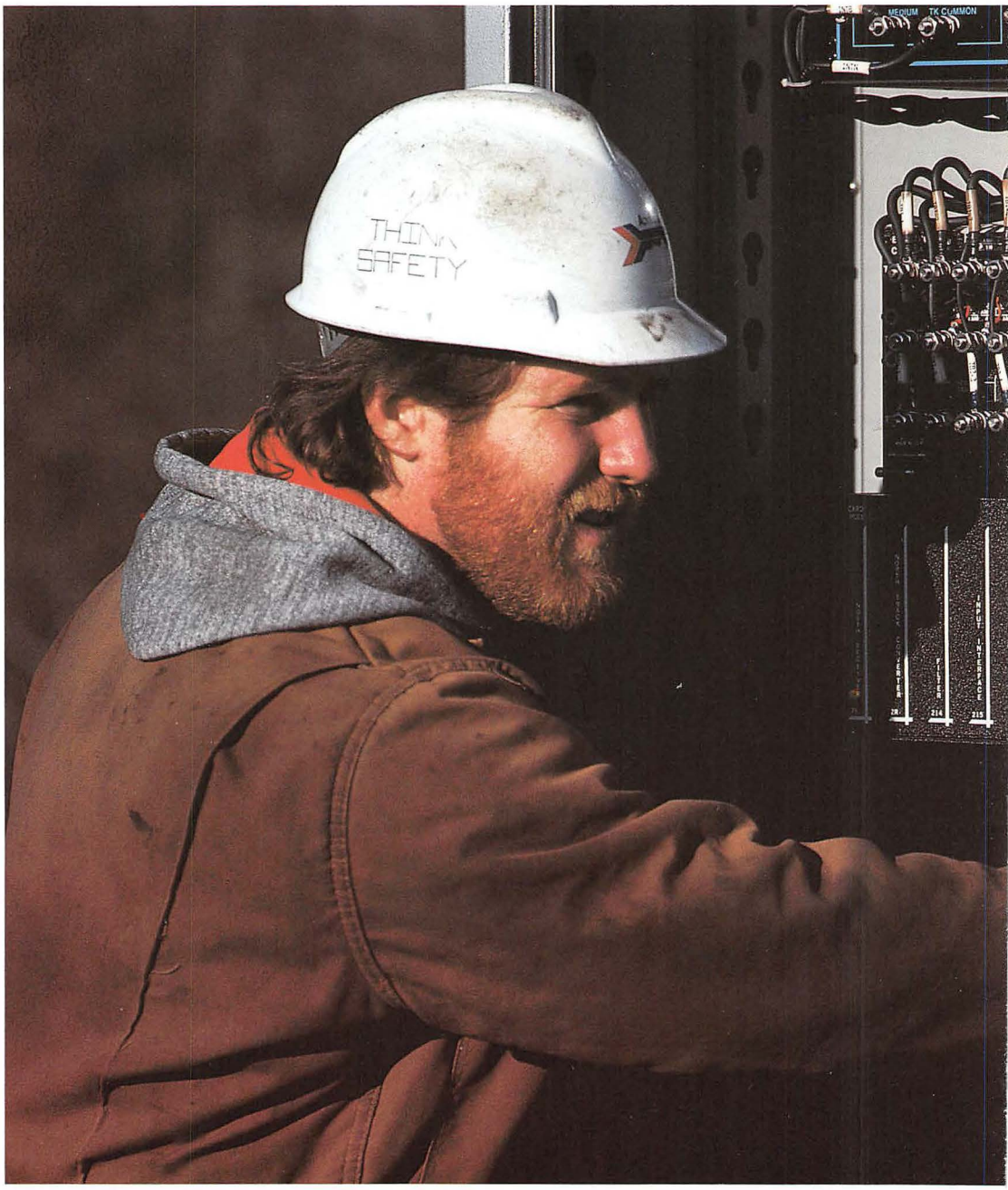
We obtained marketing rights to several positive radio frequency identification products and are combining them with our hot box detector technology to add a car/locomotive identification capability to our train inspection systems. In addition, we moved our prototype acoustical bearing detector into the field test phase, and early results with customers are most promising.

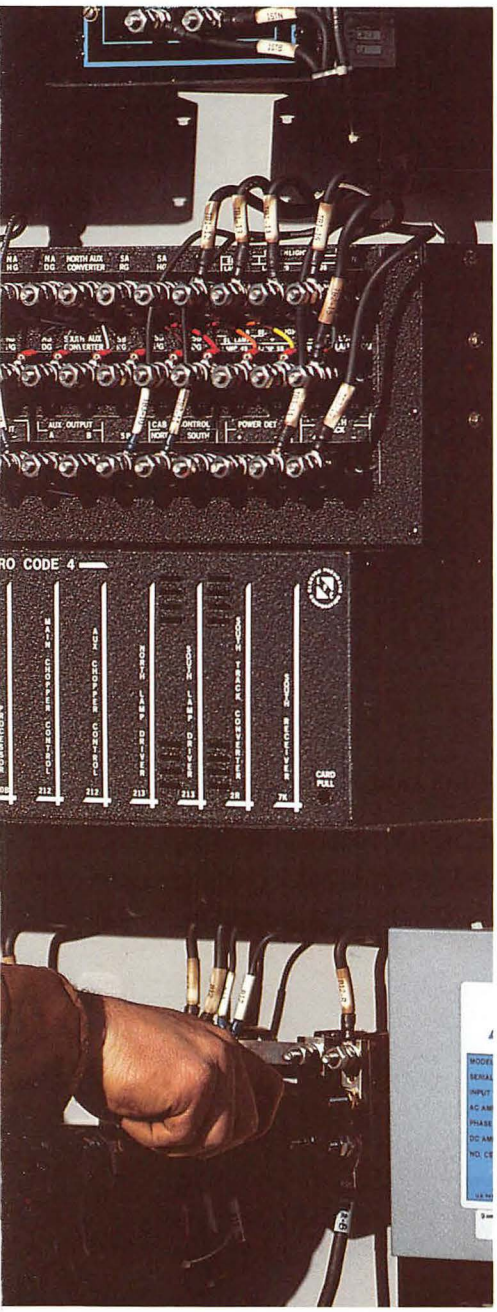
We also implemented key programs for salary determination and objective goal planning. Employees can readily identify career direction opportunities, and management can measure progress toward larger objectives, which assure the continued progress of this subsidiary. ■



Printed wiring boards, Harmon Electronics' overall supporting product group, also enjoyed a substantial increase in sales and profits in 1988—largely because of gains in product quality and adoption of an aggressive marketing program.

An Amtrak crew chief inspects one of Electro Pneumatic's Electro Code 4s, which are being installed along a 60-mile stretch of track between Philadelphia and Atlantic City. This is a major project that utilizes state-of-the-art train and crossing controls on this stretch of track and one in which Harmon has an important stake.





ELECTRO PNEUMATIC CORPORATION'S (EPC) SALES WERE STRONG throughout the year, setting sales and profit records for the third consecutive year. Shipments were made to many of the Class I railroads, including AMTRAK, which is upgrading 60 miles of its track between Philadelphia and Atlantic City. Important sales were made to other railroads, which we believe will develop into substantial business. In addition, we developed stronger international ties with a sizable sale to a private railroad in Australia.

Electro Pneumatic's principal products are the Electro Code 4 and its companion, Electro Logic system. The Electro Code 4 is a solid-state system that controls trackside signals with microprocessors and eliminates the need for most wayside lines and mechanical relays. The Electro Logic system is typically located at each end of a siding. It controls the signals and actuates track switches to allow rail traffic to proceed safely and efficiently through these "interlockings", or junction points. These products broadened Harmon's overall signal capability, which until it acquired EPC in 1984, was largely centered around controls for rail/highway grade crossings.

Extensive work was accomplished last year on the Electro Logic system. Its controlling computer software was materially upgraded, which increased its operating capabilities substantially.

Because of the large increase in orders last year, considerable time was devoted to bettering EPC's internal processes. This included expansion of the team production concept in manufacturing, and generally improving forecasting, production scheduling and parts acquisition. As a result, EPC's production techniques and cost controls were significantly enhanced in 1988, which will enable EPC to better accommodate the increased levels of business it anticipates for 1989. ■

Cantilevered signal structures at Modern's manufacturing facility in Jacksonville, Florida. The cantilever was redesigned in 1988. The new product, which is significantly stronger and less costly to manufacture, can be used for both highway and railroad applications.

MODERN'S PROFITS DECLINED IN 1988, RESULTING IN A NET LOSS for this subsidiary. The loss was largely related to products made prior to Harmon's ownership, increased material prices, relocation costs, and to operating inefficiencies that developed last year when production was shifted from its facility in Louisville, Kentucky to a new plant in Griffin, Georgia.

Structural weaknesses and design flaws and inadequacies were discovered in certain types of grade crossing cantilevers and components manufactured and sold prior to Harmon's ownership. At considerable cost, remedial action has been, and is being, taken. Legal remedies are being pursued to recover these costs and other damages.

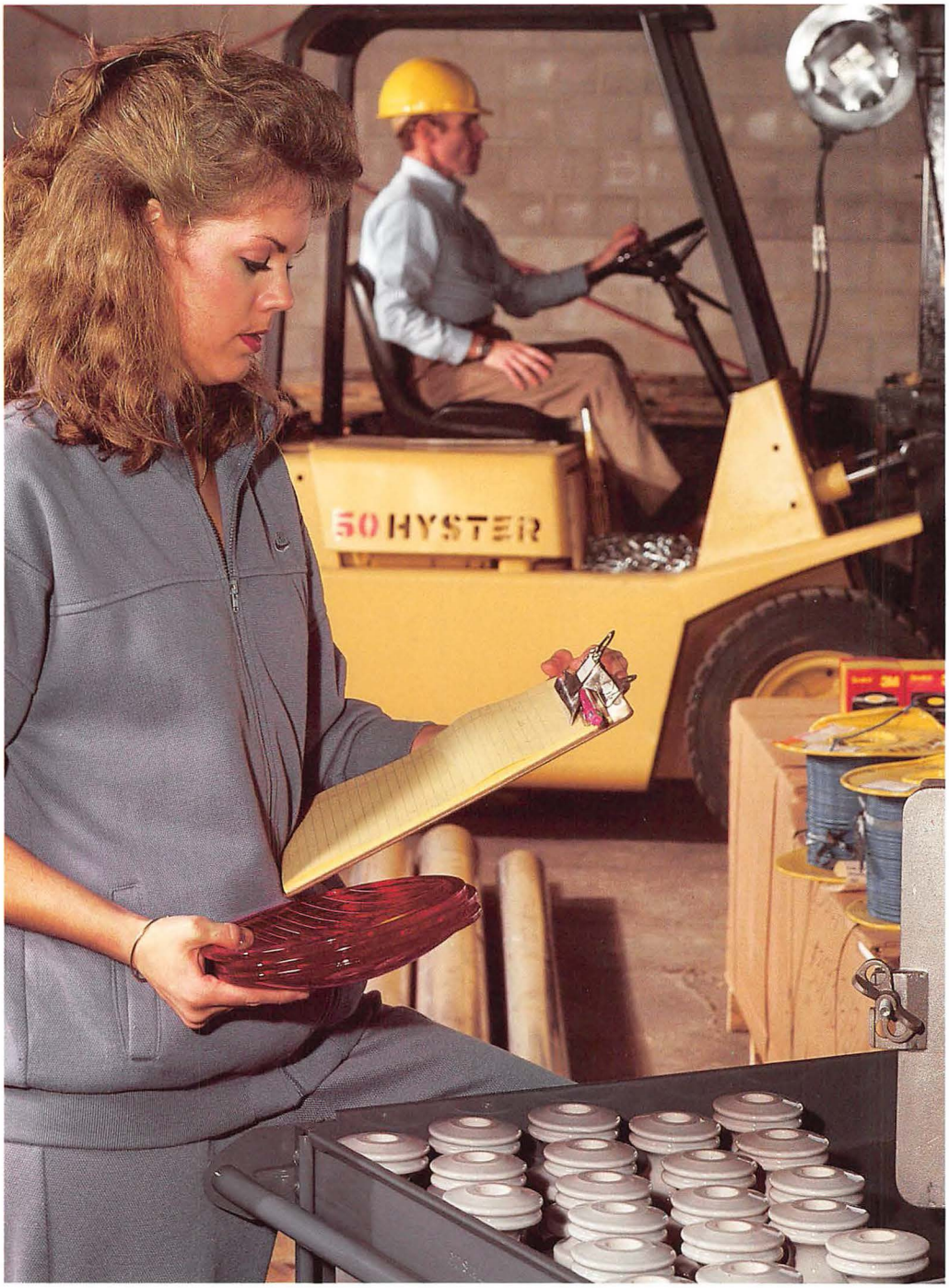
Although the move to Georgia brought Modern physically closer to many of its customers and promised lower operating costs, that latter benefit was not instantly forthcoming. New employees needed training. Consequently, early productive output did not meet expectations, which increased operating costs initially. In addition, inventory control proved difficult, and excess inventory was created until the Louisville inventory was transferred. The physical move was also costly as Modern had to occupy temporary quarters until construction of its new Griffin plant was completed.

Now that the move is completed, many of last year's operating inefficiencies are expected to be resolved during 1989. In addition, a comprehensive plan is in effect to reduce inventories and receivables, which had grown to unacceptable levels last year.

Modern also made genuine progress. It redesigned its cantilevered signal structures from the ground up. Advanced engineering techniques resulted in a significantly stronger unit that is more cost-effective to manufacture. Modern also revised its flashing signal lights. The new unit provides superior performance and reliability. It also enables customers to control their costs by offering a variety of different reflectors where previously only one was available. Modern's extensive product line also enables Harmon to sell total systems instead of components of larger systems, and Harmon has already obtained several major contracts that it might otherwise not have secured. Modern's order backlog is considerable, and we look for an improved trend in 1989. ■

Production of Modern's flashing lights for railroad crossings was transferred last year from Louisville to a new plant in Griffin, Georgia. Flashing lights are one of the mainstay products in Modern's line.

Receiving components for a railroad customer at CAMCO's warehouse facility in Waycross, Georgia. CAMCO's purpose is to assemble kits as well as store commonly-used railroad equipment for delivery on short notice to its customers.



CAMCO, FOUNDED IN 1987 AS A WHOLLY-OWNED SUBSIDIARY OF Harmon Industries, Inc., opened its Waycross, Georgia facility in April 1988. It is a service business and the only non-manufacturing enterprise of Harmon. CAMCO's current principal customers are Class I railroads and short-line railroads operating in the Southeastern United States. CAMCO's present operations are conducted from a 12,000 square foot facility.

CAMCO inventories commonly-used railroad equipment for its customers. These inventories include components of Harmon's manufacture as well as those of other suppliers. It assembles these various products into complete kits, which it ships to its customers on short notice. A typical kit, for example, might include every component a railroad would need to complete a standard signal installation. In addition to assembling kits, CAMCO also provides security and storage for commonly-used individual signal and communication products, track material and locomotive parts.

The market for CAMCO's services is growing. Even though rail traffic is increasing, many railroads are reducing the number of personnel they maintain on a full time basis for equipment installation and repair because that work is sometimes sporadic and often unpredictable.

CAMCO made its first shipment in October, 1988, and it has major orders scheduled for shipment in the first quarter of 1989. In addition, the CAMCO concept is generating substantial interest throughout our industry, and requests for quotations are increasing.

Several railroads in other sections of the country have identified products that CAMCO might store for them. Our long-range plan is to establish additional facilities as needed.

CAMCO incurred a modest operating loss in 1988, principally because start-up expenses were incurred throughout the year while the first shipment did not occur until October. ■

More than 100,000 used railroad crossties awaiting processing at Harmon's Cedrite factory in Kansas City, Kansas. The used ties are pulverized, mixed with a proprietary resin formula, and then formed under great pressure and heated to produce the Cedrite Tie, which is substantially stronger and more weather resistant than conventional creosoted ties.

CEDRITE, HARMON'S 80%-OWNED SUBSIDIARY, CONTINUED IN ITS start-up phase throughout 1988. This was a disappointment as initial automated production of its reconstituted crosstie was originally anticipated in the latter half of 1988.

The interior of the Cedrite plant contains massive presses and ovens used to produce the Cedrite reconstituted railroad crosstie.

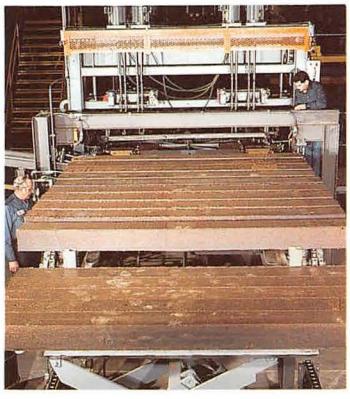
Construction for the physical plant began in August, 1987 and proceeded on schedule. The plant was ready for equipment installation by April 1, 1988. The initial schedule called for manufacturing equipment to be installed during the ensuing four months. Production runs would commence shortly thereafter.

By June, certain machines critical to the manufacturing process had not arrived as scheduled, and progress was slowed accordingly. When these machines finally arrived and were installed, preliminary testing indicated that parts of the design were inadequate, and corrections would have to be made. This was especially true with the large hydraulic presses, which did not function properly when pressure was applied. Several modifications have already been made, and more will be required before the entire system is fully operational.

While this testing process is continuing, Cedrite has successfully produced a quantity of prototype ties. Management is pleased with the quality of these ties.

When the delays became apparent, management worked closely with the Union Pacific and Santa Fe railroads, the two principal customers for Cedrite's initial output. Both recently extended their contracts, reiterating their enthusiasm for the product and their willingness to accept delays in shipments. In addition, management has pursued discussions with other Class I railroads in North America. Most exhibited a high level of interest and indicated they would like to commence testing as soon as commercial production becomes available.

These delays, however, have been costly. Cedrite incurred a $1.3 million net loss in 1988, $1 million of which was absorbed by Harmon because of its 80% ownership.



A limited run of prototype ties are brought to a custom-designed machine that pre-drills each tie so that railroad spikes can be easily driven in at the rail site.

By its very nature, the Cedrite process is extremely capital intensive. There is substantial fixed overhead comprised of interest and depreciation costs and a sizable payroll for technicians, programmers and operators to support the capital equipment. Conversely, the product itself will have relatively low material and direct labor costs. Hence delays in production generate large fixed costs with no profits on sales to offset them. Thus the critical issue is to get up and running in volume. When this occurs, the anticipated volume is expected to readily cover fixed costs and provide meaningful profits to Cedrite and Harmon.

THE PRODUCT ITSELF IS SUPERIOR IN MANY WAYS TO THE conventional creosote-treated wooden tie. It is stronger and more durable. It has superior resistance to damage from rot and insects. The tie has no grain. Therefore, it is practically immune to warping or splitting. Its higher density provides a better "grip" for conventional spikes, reducing the problem of loosened spikes. No special equipment is needed for installation. And unlike concrete ties, the Cedrite tie can be laid alongside conventional ties, which makes it an excellent replacement tie. In addition, production of this tie requires the use of worn out conventional ties, thus solving a substantial disposal problem that railroads encounter.

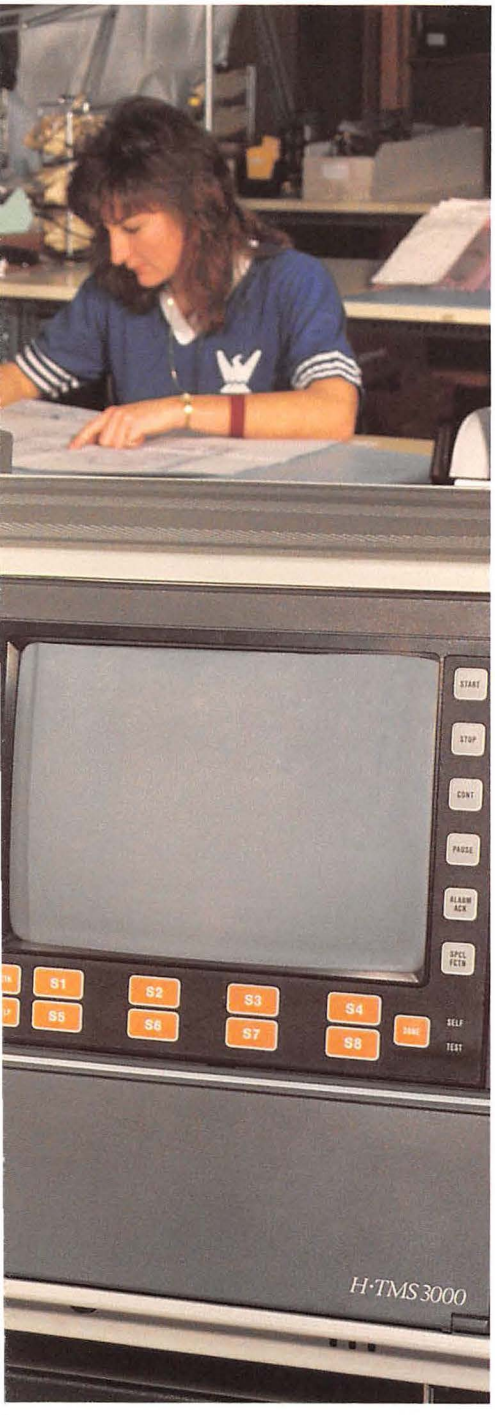
Harmon expects to invest approximately $17 million in the Cedrite Kansas City project. To date, it has made or committed to expenditures of approximately $14 million. ■

The main press, which compresses the ground up mixture of used ties and bonding resin to produce the Cedrite reconstituted crosstie, and an automatic control panel are being adjusted and debugged at Cedrite's new facility in Kansas City, Kansas.

Phoenix Data acquired the H.TMS product line of Honeywell, Inc. in June of 1988. This product is a micro-processor based, self-contained test management system.

One of the uses is to measure, analyze and record data used to evaluate automotive passenger safety features, structural integrity, and mechanical component life.

It is currently used by auto manufacturers in Sweden, Germany, Italy and the United States, and by major suppliers to automotive companies, as well.



IN DECEMBER OF 1988, HARMON, WHICH OWNED 31% OF THE stock of Phoenix Data, Inc., agreed to purchase the remaining 69% for 149,630 shares of restricted Harmon stock, thus making PDI a wholly owned subsidiary. The transaction was completed as of January 1, 1989.

PDI designs and produces scientific data acquisition and test management products for military, aerospace, scientific, and industrial markets. The company is recognized for its innovative solutions to difficult data gathering and testing problems.

PDI products are used in a wide variety of applications including measurement of stress and vibration on jet aircraft engines, geophysical research, outer space exploration data gathering, wind tunnel testing to measure air-frame integrity, and analysis of automotive crash testing to evaluate safety factors.

The traditional PDI products are integrated with major mainframe computers and a variety of peripheral equipment to make up a total data acquisition system for use in extremely high performance applications.

In June of 1988, PDI acquired the H•TMS line of Test Management products from Honeywell, Inc. This product line is based around a fully integrated data acquisition system which includes an internal microprocessor, various recording media and software products. This greatly enhances PDI's capabilities to serve applications requiring compact portability and data collection capacities in non-laboratory environments.

Until mid-1988, much of PDI's output was sold to the defense industry. However, with the impact of the Gramm-Rudman Act and diversion of funds to support the U.S. fleet in the Persian Gulf, contracts in which PDI would have participated were reduced, delayed, and even cancelled. As a result, PDI's sales were $1.5 million lower than initially projected for 1988. The H•TMS acquisition proved quite timely. Approximately 50% of all products shipped in the second half of 1988 were of the acquired product line. Notwithstanding the beneficial contribution of the Honeywell product line, PDI reported a modest loss for the year. Management anticipates a profit for 1989. ■

The Bay Line Railroad Company operates approximately 90 miles of track between Panama City, Florida and Dothan, Alabama. Short-line and regional railroads, of which there are over 450 in the United States, are especially important customers of Modern Industries and CAMCO.

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Selected Financial Data*

(In thousands, except per share items) *December 31* [1]	*1988*	*1987*	*1986*	*1985*
Operations				
Net sales	$ 64,558	$ 57,068	$ 47,223	$ 52,993
Cost of sales	46,734	41,492	32,693	36,521
Gross profit	17,824	15,576	14,530	16,472
Selling, general and administrative expenses	12,493	10,856	9,362	8,497
Other operating expenses (income)	(14)	38	80	99
Operating income	5,345	4,682	5,088	7,876
Other expense	1,579	1,562	950	1,746
Earnings from continuing operations before income taxes	3,766	3,120	4,138	6,130
Income taxes	1,280	1,428	2,039	2,909
Earnings from continuing operations	2,486	1,692	2,099	3,221
Discontinued operations	—	—	—	—
Net earnings	$ 2,486	$ 1,692	$ 2,099	$ 3,221
Effective income tax rate	34.0%	45.8%	49.3%	47.5%
Return on sales	3.9%	3.0%	4.4%	6.1%
Return on year-end equity	18.3%	14.6%	20.0%	22.9%
Weighted average outstanding shares	4,509	4,472	4,854	4,430
Per Share Data [2]				
Net earnings	$ .55	$ .38	$ .43	$ .73
Cash dividends	.125	.125	.125	.125
Book value	3.03	2.60	2.34	2.94
Price/earnings ratio range [3]	9.5-14.8	13.2-22.4	15.4-27.3	8.2-16.1
Other Data				
(At Year-End)				
Total Assets	$ 46,105	$ 38,738	$ 34,045	$ 30,111
Working capital	7,037	11,870	11,599	9,962
Long-term debt	14,440	14,621	13,793	6,604
Stockholders' equity	13,557	11,604	10,470	14,038
Current ratio	1.44:1	2.11:1	2.36:1	2.17:1
Quick assets ratio	.59:1	1.03:1	.96:1	.90:1
Debt to equity ratio	2.40:1	2.34:1	2.25:1	1.14:1
Capital additions	9,886	3,552	2,212	2,919
Depreciation and amortization	2,834	2,531	2,074	1,775
Outstanding shares	4,478	4,472	4,472	4,769

(1) The Company changed its year end to December 31 from September 30, effective December 31, 1981.
(2) Adjusted for all stock splits and stock dividends through December 31, 1988, inclusive.
(3) High and Low prices for the year divided by earnings per share for the year.
* Unaudited

	Years ended September 30, [1]						
	1984	1983	1982	1981	1980	1979	1978
	$ 44,445	$ 29,618	$ 27,783	$ 30,248	$ 27,693	$ 21,113	$ 12,226
	32,669	22,355	20,120	21,841	21,482	15,907	9,234
	11,776	7,263	7,663	8,407	6,211	5,206	2,992
	6,332	4,748	4,420	4,677	3,723	3,131	2,115
	25	(38)	(21)	(100)	5	6	(53)
	5,419	2,553	3,264	3,830	2,483	2,069	930
	768	551	606	799	541	234	—
	4,651	2,002	2,658	3,031	1,942	1,835	930
	2,214	900	1,082	1,335	788	800	407
	2,437	1,102	1,576	1,696	1,154	1,035	523
	—	—	—	(6)	184	340	112
	$ 2,437	$ 1,102	$ 1,576	$ 1,690	$ 1,338	$ 1,375	$ 635
	47.6%	45.0%	40.7%	44.0%	41.4%	44.3%	44.5%
	5.5%	3.7%	5.7%	5.6%	4.8%	6.5%	5.2%
	15.6%	8.5%	12.9%	15.4%	14.1%	16.3%	8.6%
	4,733	4,650	4,650	4,650	4,650	4,650	4,650
	$ .51	$ .24	$ .34	$ .36	$ .29	$ .30	$ .14
	.0875	.075	.075	.075	.0625	.0625	.0625
	3.21	2.78	2.62	2.35	2.04	1.82	1.58
	7.8-13.7	14.3-28.2	7.9-12.1	7.9-18.8	8.0-18.5	3.4-11.9	7.7-12.7
	$ 30,627	$ 21,880	$ 19,330	$ 19,219	$ 21,353	$ 15,495	$ 10,390
	12,370	10,510	9,052	9,031	10,224	6,816	4,822
	6,752	3,956	3,324	3,638	6,019	1,474	—
	15,579	12,925	12,172	10,945	9,499	8,452	7,368
	2.65:1	3.35:1	3.63:1	3.08:1	2.84:1	2.27:1	2.70:1
	1.07:1	1.27:1	.94:1	1.04:1	.98:1	.80:1	1.20:1
	.97:1	.69:1	.59:1	.76:1	1.25:1	.83:1	.41:1
	1,467	1,082	1,908	1,873	1,687	1,073	1,281
	1,353	1,082	996	792	565	418	350
	4,850	4,650	4,650	4,650	4,650	4,650	4,650

Management's Discussion and Analysis of the Summary of Operations and Financial Condition

RESULTS OF OPERATIONS

Sales increased 13.1% in 1988 to $64.6 million. This followed a 20.8% sales increase in 1987 to $57.1 million, which constituted a $9.8 million gain over 1986 sales. Earnings increased 46.9% to $2.5 million in 1988; 1987 earnings of $1.7 million reflected a decline of 19.4% from $2.1 million reported for 1986. A portion of the sales increases for each of the past three years includes the sale of products obtained through purchase of products or outright acquisition of entire companies. The company seeks to acquire other products or companies that expand its own lines or provide it entry into new markets. No acquisitions are presently being negotiated. The table below should be read in conjunction with the following commentary.

GROSS SALES BY PRODUCT FUNCTION*

(In thousands) *Years ended December 31,*	*1988*		*1987*		*1986*	
	Amount	*%*	*Amount*	*%*	*Amount*	*%*
Railroad Crossing Warning Systems	$26,777	40.9%	$25,486	44.1%	$24,614	51.5%
Train Inspection Systems	3,318	5.1	2,034	3.5	2,585	5.4
Signal Control Track Circuits	7,546	11.5	5,342	9.2	5,469	11.5
Custom Products for the Railroads	15,467	23.6	11,891	20.6	5,070	10.6
Radio Communication Equipment	2,341	3.6	4,038	7.0	2,541	5.3
Other	9,999	15.3	8,999	15.6	7,511	15.7
Total	$65,448	100.0%	$57,790	100.0%	$47,790	100.0%

*Sales volumes shown above are gross totals and do not include cash discounts, etc. As a result there are slight differences between the figures in this table and those presented in the audited Consolidated Statements of Earnings, which appear on page 32 in this annual report. The differences are slight and do not affect the validity of the discussion and analysis which are presented below.

The method of marketing the company's products began changing in 1987 to include more systems business, or total signal "packages," which are largely custom made from several different Harmon product categories. Thus, direct comparisons with years prior to 1987 are difficult and less meaningful. For example, 1988 and 1987 sales of "Custom Products for Railroads" include items that would have appeared previously under the headings "Railroad Crossing Warning Systems" or "Signal Control Track Circuits."

• *Sales Analysis*

The sales increase in 1988 principally reflected increased market demand. The $10 million sales increase between 1987 and 1986 was largely the result of including $9 million in additional sales from Harmon's subsidiary, Modern Industries, Inc. (Modern—see commentary on page 10 of this report), by recording 12 months of its operations for 1987 versus only the final five months of its operations for 1986 since Modern was not acquired by Harmon until August 1, 1986.

Selling prices remained extremely competitive throughout the past three years. Some price reductions were granted, and virtually no price increases were obtained.

Market penetration in 1988 remained approximately level with 1987; from 1986 to 1987, management believes it increased its market share, but that the total market was smaller in 1987.

The strength of our market is conditioned somewhat by the degree to which monies are requested from the federal government's fund to improve the safety at rail/highway grade crossings. In general terms, the federal government has authorized up

to $160 million annually for the installation of safety-related devices at crossings—gates, bells, warning signals, etc. The funds are used both for new installations and for upgrades to existing crossings. Usually, states and local governments and railroads may share up to 10% of the cost of an installation. In general, the state will request those federal funds after it has approved a grade crossing installation proposal of a railroad. These proposals ebb and flow from time to time as railroads each year determine a wide range of construction priorities, many of which extend outside the scope of grade crossing installations. Thus, for a variety of reasons, requests for federal funds for grade crossing installations have declined in recent months. Moreover, it would be pure speculation to predict when an upturn in this area of railroad construction activity will occur.

• *Gross Profit*

In 1988, sales increased over those of 1987 in five of Harmon's six product functions. These increases were principally in products that generate Harmon's higher profit margins; however, these gains were largely offset by a decline in the already thin profit margins of Modern, inclusion of certain product costs of Cedrite and CAMCO, Harmon's start-up subsidiary companies (see pages 12-17 in this report), and an $800,000 increase in research and development costs, of which half was related to Cedrite. As a result, the 1988 gross profit margin of 27.6% was only fractionally improved over the 27.3% margin achieved in 1987. From 1986 to 1987, margins declined 3.5 percentage points largely because the sales increase in 1987 centered around lower profit items (principally Modern products) while sales declined in higher margin products. The fastest growing product function classification, Custom Products for the Railroads, are packages of several products sold as a unit.

Expenses as a Percent of Net Sales

	Percentage of Net Sales Year Ended December 31,			*Percentage of Change*		
	1988	*1987*	*1986*	*1988 over 1987*	*1987 over 1986*	*1986 over 1985*
Net sales	100.0%	100.0%	100.0%	13.1	20.8	(10.9)
Cost of sales	72.4	72.7	69.2	12.6	26.9	(10.5)
Gross profit	27.6	27.3	30.8	14.4	7.2	(11.8)
Selling, general and administrative and other operating expenses, net	19.3	19.1	20.0	15.1	16.0	10.2
Operating income	8.3	8.2	10.8	12.9	(8.7)	(35.2)
Other expense	2.4	2.7	2.1	(2.2)	55.3	(44.2)
Earnings before income taxes	5.9	5.5	8.7	20.7	(24.6)	(32.5)
Income taxes	2.0	2.5	4.3	(10.4)	(30.0)	(29.9)
Net earnings	3.9%	3.0%	4.4%	46.9	(19.4)	(34.8)

• *Selling, General & Administrative Expenses*

Selling, general and administrative expenses increased $1.6 million in 1988 to $12.5 million, comprising 19.4% of sales. This compared to SG&A expenses of $10.9 million in 1987 (19.0% of sales) and $9.4 million in 1986 (19.8% of sales). Increases in 1988 include the normal selling costs that accompany higher sales, ongoing start-up costs for Cedrite and CAMCO, costs incurred in moving Modern from Louisville, Ky. to Griffin, Ga., a substantial increase in health care costs, and higher expenses to meet

increased regulatory requirements. In addition, substantially increased legal costs were incurred by the company in pursuing legal remedies against Modern's previous owner to recover damages incurred by the company as a result of the defectiveness and inadequacies of certain products manufactured and sold by Modern prior to the company's ownership. The increase of $1.5 million from 1986 to 1987 results primarily from inclusion of twelve months of expenses for Modern versus only five months in 1986, initial start-up expenses of Cedrite and CAMCO, higher sales costs relating to sales realized and a sharp increase in the order backlog, and increased insurance costs. The ongoing start-up costs for Cedrite and CAMCO were higher in 1988 than in 1987.

• *Research and Development*

Research and Development expenditures of $4.1 million were 6.4% of sales for 1988 compared to $3.3 million in 1987 (5.8% of sales) and $2.4 million in 1986 (5% of sales). Approximately half of the 1988 increase relates to expenditures for Cedrite. In general, R&D expenditures have been increased in response to specific customer needs, which became known as a result of intense sales and marketing efforts.

Harmon's R&D expenditures follow a set corporate policy and are not heavily influenced by current sales or business trends. This policy insures a continuity of product improvement. Harmon expenses R&D costs as incurred. This often penalizes current performance, as it did in 1988 and 1987, but new products are never burdened with development cost recoveries.

• *Miscellaneous Income*

In each of the past three years, the company experienced positive income from miscellaneous activities: 1988—the $217,000 was mainly a gain on the sale of Modern's vacant factory in Louisville, which had no effect on the production of railroad crossing warning systems; 1987—the sale of an airplane owned by Modern and a modest profit from the investment in Phoenix Data, Inc. made up the majority of the $144,000 income; 1986—the $78,000 primarily consisted of interest earned on cash investments.

• *Interest Expense*

Interest expense increased 14.3% to $1.8 million in 1988. This is the result of higher borrowings to support investments in Cedrite and an increase in borrowing rates. Ongoing interest costs will be higher since approximately $200,000 in interest expense was capitalized in 1988. In 1987 interest expenses increased over 1986 costs because of a $7 million increase in borrowings, principally to redeem certain Harmon common stock held by a private investor and, to a lesser extent, to support the initial start-up expenses of Cedrite.

• *Income Taxes*

The company's effective tax rate for 1988 was 34.0% of pretax earnings compared to 45.8% in 1987 and 49.3% for 1986. The decline in 1988 reflects lower tax rates in effect and an increase in research and experimentation credits. The decline in the tax rate for 1987 resulted primarily from a decrease in the federal income tax rate for 1987. To a lesser extent, 1987 taxes also declined because of a research and experimentation tax credit realized that year. The 1986 effective tax rate reflects higher tax rates then in effect, plus the phase out of investment tax credits for 1986, certain non-deductible expenses associated with the acquisition of Phoenix Data, Inc., and generally higher state tax rates.

• *FASB No. 96*

The Financial Accounting Standards Board adopted a new ruling (FASB 96) in December 1987, which requires implementation for years beginning after December 15, 1989. The basic thrust of this rule requires the company to reflect current tax rates by reducing the liability that is currently recorded on the books, but which will not be paid until future years. These liabilities are currently carried on the books of the company at the higher, older tax rates. In addition, this ruling requires the company to write off deferred recoverable income taxes that will not be due in a year in which a deferred tax liability is payable.

Harmon has not yet implemented this standard, and it is presently studying its effects. However, it believes the net effect of writing off the recoverable deferred income taxes and reducing the deferred tax payable will be insignificant. Future effective tax rates may be affected negatively since the company may not be able to record recoverable income taxes on certain deferred expense items.

• *Inflation*

In the aggregate, inflation has been moderate during the past three years, averaging 4% to 5%. Traditionally, such minor cost increases have been offset by implementing upward price adjustments for Harmon products. Competitive pressures over the past three years have made this impossible. Moreover, prices have been reduced on certain items to remain competitive and keep market share. Thus, inflation has become a nagging, eroding force that has been offset in recent years only by gains in productivity, which to date have been successful. Management believes that competitive pricing pressures will remain for the foreseeable future. Its program to combat this is to continue to increase productivity and to develop totally new products in areas where competition is less fierce (Cedrite crossties, for example) and to acquire products or companies in railroad electronics or allied fields that will expand Harmon's total product offerings (Phoenix Data, for example—see commentary on pages 18-19 in this report).

• *Earnings Analysis*

Earnings contributions from the company's established operating subsidiaries, Harmon Electronics, Inc. and EPC, were the highest on record during 1988. Their margins increased substantially because of efficiencies made in the manufacturing process, inventory controls, and from natural expansion of margins accompanying increased volumes. To a large extent, these advances are not apparent in the consolidated figures because of the increase in research and development expenditures in 1988, a loss sustained during 1988 by Modern, and the start-up losses incurred by Cedrite (approximately $1.0 million after minority interest) and CAMCO.

• *Operations Outlook*

The prospects for 1989 operations contain some unknowns. In order of magnitude, ongoing issues are (1) the net effect of a recent slowdown in orders for traditional products; (2) the amount of time and additional investment that will be required to achieve automated production in the Cedrite crosstie program. When up and running, the production of crossties is expected to produce substantial profits; however, until this occurs, losses will continue (see commentary on pages 14-17 in this report); (3) the time it will take to restore profitability to Modern's operations; (4) the speed in which PDI's acquired product, H•TMS, can be integrated into its production line and marketing structure and the extent of financing required for that subsidiary; and (5) the amount of additional investments in time and money that will be required to achieve profitability in our CAMCO start-up venture.

LIQUIDITY

The "Other Data" section of the Selected Financial Data table, which appears on page 22 in this report, should be read in conjunction with the following comments.

Traditional measures of liquidity at 1988 year–end (working capital, current ratio, quick assets ratio, debt to equity) deteriorated in 1988 from positions at 1987 and 1986 year-ends, largely because of monies invested to support the Harmon start-up ventures, principally Cedrite. On the whole, however, the ratios continue to indicate an acceptable liquidity position for the company.

• *Capital Expenditures*

Capital expenditures for 1988 were $9.9 million, including $7.7 million for Cedrite. Capital expenditures in 1987 were $3.6 million ($2.1 million for Cedrite), and $2.2 million in 1986. Capital expenditures for 1989 are estimated at $5.0 million, including approximately $2.0 million for Cedrite. The capital budget for 1989 is tentative and can be scaled back if necessary.

• *Cash Needs*

The company anticipates higher than normal cash outlays in the first half of 1989. The cash will be used to pay off certain accrued liabilities, to fund capital expenditures, and to provide operating capital for Cedrite, CAMCO and Phoenix Data. Management believes its unused lines of credit and subsequent projected cash flows will be sufficient to meet these needs; however, 1989 contains some unknowns (see "Operations Outlook" on page 27), which could have a considerable effect on the company's need for cash.

• *Inventories*

Inventories increased $1.6 million in 1988 on a sales increase of $7.5 million. The bulk of that increase was attributable to Modern's operations, which experienced a sales decline in 1988. Except for the Modern imbalance, the remaining subsidiaries continued to reduce their inventories relative to sales for the third consecutive year.

• *Credit & Collections*

Receivables declined $1.6 million (15%) from 1987 to 1988 year-ends. The 1987 year-end figure of $10.6 million was abnormally high because of unusually large sales that occurred at year-end. Thus, the decrease in 1988 represents more a return to normal than genuine improvement.

• *Indebtedness*

Total indebtedness increased $1.3 million in 1988 ($1,553,000 increase in current debt and a $221,000 decrease in long-term debt). Long-term debt increased approximately $1 million in 1987 to facilitate an 80% acquisition of Cedrite.

SHARE DATA

Share data presented throughout this report reflects all stock splits and stock dividends since inception. The number of shares outstanding fluctuated considerably during 1986 owing to the purchase of Modern and a stock redemption that occurred that year. The number of outstanding shares remained unchanged in 1987 and increased slightly in February, 1988 incident to issuance of 6,160 shares in payment of accrued officers' bonuses. The weighted average shares outstanding have fluctuated during 1988, the first year that stock options were granted to directors and officers. The number of option shares included as outstanding varies with the market price of the company's stock. Neither the weighted or actual shares outstanding at 1988 year-end reflect 227,027 shares of treasury stock that are reserved for possible debenture conversion, which is explained more fully in note 4 in the accompanying financial statements. The remainder of the treasury shares (480,231) is pledged against a $2 million bank line of credit. ■

Comparative Quarterly Results

(Thousands of dollars, except per share amounts)	*Quarters Ended March 31*	*June 30*	*Sept. 30*	*Dec. 31*
1988				
Net sales	$14,347	$16,350	$18,245	$15,616
Gross profit	3,891	4,803	5,355	3,775
Net earnings	417	785	952	332
Net earnings per common share	.09	.18	.21	.07
Cash dividend per common share	.0625	—	.0625	—
Stock price range:				
High	6 1/8	7 1/4	8 1/8	7 7/8
Low	5 1/4	5 7/8	6 5/8	7 1/8
1987				
Net sales	$11,950	$13,639	$14,954	$16,525
Gross profit	3,306	3,620	4,106	4,544
Net earnings	233	265	437	757
Net earnings per common share	.05	.06	.10	.17
Cash dividend per common share	.0625	—	.0625	—
Stock price range:				
High	8 1/2	7 1/8	7 7/8	7 3/4
Low	6 7/8	6	6 1/4	5

Fourth Quarter Results (Unaudited)

Sales for the 1988 fourth quarter declined six percent to $15.6 million from $16.5 million for the same quarter in 1987. Earnings declined 56% to $332,000, or $0.07 cents per share, compared with $757,000, or $0.17 per share, for the fourth quarter of 1987. Orders and sales softened in late 1988. Management believes the reduction in sales reflects, in part, the effect of a slowdown in funds currently being sought from the federal rail/highway grade crossing improvement program. A significant portion of Harmon's traditional business is derived from the sale of railroad grade crossing equipment.

Margins were under pressure in the 1988 final quarter chiefly because of increased research and development expenditures and operating costs associated with the Cedrite project. This is reflected both in increased cost of sales as a percent of sales and a rise in selling, general and administrative expenses. Pre-tax income declined 72% to $353,000 from $1.3 million. Lower taxes for the 1988 fourth quarter (principally because of substantially larger R&E credits and lower statutory tax rates) reduced the decline in net earnings. ■

Consolidated Balance Sheets
(Thousands of dollars)

Assets at December 31,	*1988*	*1987*
Current assets:		
Cash and cash equivalents	$ 534	$ 361
Trade receivables, less allowance for doubtful accounts of $239,000 in 1988 and $109,000 in 1987 (notes 3 and 4)	9,008	10,638
Note receivable from affiliate (note 2)	100	—
Costs and estimated earnings in excess of billings on uncompleted contracts (notes 3 and 4)	341	144
Inventories (note 4):		
Work in process	3,911	3,993
Raw materials and supplies	8,869	7,211
	12,780	11,204
Prepaid expenses and other current assets	365	225
Total current assets	23,128	22,572
Property, plant and equipment, at cost (note 4):		
Land	650	761
Buildings	6,275	3,964
Machinery and equipment	14,184	7,937
Office furniture and equipment	5,663	5,131
Transportation equipment	1,027	1,534
Leasehold improvements	953	907
	28,752	20,234
Less accumulated depreciation and amortization	10,537	8,951
Net property, plant and equipment	18,215	11,283
Cost in excess of fair value of net assets of subsidiaries acquired, net of amortization of $742,000 in 1988 and $539,000 in 1987	1,459	1,276
Patents, net of amortization of $1,263,000 in 1988 and $832,000 in 1987 (notes 2 and 4)	1,580	1,969
Other assets	1,723	1,638
	$ 46,105	$ 38,738

See accompanying notes to consolidated financial statements.

Liabilities and Stockholders' Equity at December 31,	*1988*	*1987*
Current liabilities:		
Notes payable to bank (note 4)	$ 1,772	$ 555
Current installments of long-term debt (note 4)	2,111	1,775
Accounts payable	6,201	4,368
Accrued payroll, bonus and employee benefit plan contributions	2,927	1,762
Billings in excess of costs and estimated earnings on uncompleted contracts (note 3)	1,241	413
Federal and state income taxes payable	388	537
Other accrued liabilities	1,451	1,292
Total current liabilities	16,091	10,702
Deferred income taxes	386	686
Deferred liability (note 7)	1,193	818
Long-term debt and capitalized lease obligations (note 4)	14,400	14,621
Minority interest	478	307
Stockholders' equity (notes 4 and 8):		
Common stock of $.25 par value; authorized 10,000,000 shares, issued 5,185,005 in 1988 and 5,178,845 shares in 1987	1,296	1,295
Additional paid-in capital	11,073	11,047
Retained earnings	8,181	6,255
	20,550	18,597
Less treasury stock at cost, 707,258 shares in 1988 and 1987	6,993	6,993
Total stockholders' equity	13,557	11,604
Commitments (note 7)		
	$ 46,105	$ 38,738

Consolidated Statements of Earnings

(Thousands of dollars, except per share amounts)

Years ended December 31,	*1988*	*1987*	*1986*
Net sales	$ 64,558	$ 57,068	$ 47,223
Cost of sales	46,734	41,492	32,693
Gross profit	17,824	15,576	14,530
Selling, general and administrative expenses	12,493	10,856	9,362
Amortization of cost in excess of fair value of net assets of subsidiaries acquired	203	182	158
Miscellaneous income — net	217	144	78
Operating income	5,345	4,682	5,088
Interest expense	1,835	1,606	950
Minority interest in loss of consolidated subsidiary	256	44	—
Earnings before income taxes	3,766	3,120	4,138
Income tax expense (benefit) (note 5):			
Current	1,588	1,638	1,956
Deferred	(308)	(210)	83
	1,280	1,428	2,039
Net earnings	$ 2,486	$ 1,692	$ 2,099
Net earnings per common share	$ .55	$ .38	$ .43

See accompanying notes to consolidated financial statements.

Consolidated Statements of Stockholders' Equity

(Thousands of dollars, except per share amounts)

	Common Stock	*Additional Paid-in Capital*	*Retained Earnings*	*Treasury Stock*	*Total Stockholders' Equity*
Balance at December 31, 1985	$ 1,535	$11,843	$12,828	$ (12,168)	$14,038
Net earnings	—	—	2,099	—	2,099
Retirement of treasury stock	(343)	(2,641)	(9,184)	12,168	—
Common stock issued (note 2)	103	2,603	—	—	2,706
Redemption of common stock (note 8)	—	(758)	—	(6,993)	(7,751)
Dividends declared ($.125 per share)	—	—	(622)	—	(622)
Balance at December 31, 1986	1,295	11,047	5,121	(6,993)	10,470
Net earnings	—	—	1,692	—	1,692
Dividends declared ($.125 per share)	—	—	(558)	—	(558)
Balance at December 31, 1987	1,295	11,047	6,255	(6,993)	11,604
Net earnings	—	—	2,486	—	2,486
Common stock issued (note 8)	1	26	—	—	27
Dividends declared ($.125 per share)	—	—	(560)	—	(560)
Balance at December 31, 1988	$ 1,296	$11,073	$ 8,181	$ (6,993)	$13,557

See accompanying notes to consolidated financial statements.

Consolidated Statements of Cash Flows

(Thousands of dollars)

Harmon Industries, Inc. and Subsidiaries

Years ended December 31,	*1988*	*1987*	*1986*
Cash flows from operating activities:			
Net income	$ 2,486	$ 1,692	$ 2,099
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	2,834	2,531	2,074
(Gain) loss on sale of property, plant & equipment	(225)	24	—
Deferred tax expense (benefit)	(308)	(210)	83
Minority interest in loss of consolidated subsidiary	(256)	(44)	—
Changes in assets and liabilities, net of effects of purchase of Modern Industries, Inc.			
Trade receivables	1,630	(2,943)	1,061
Inventories	(1,576)	300	738
Estimated costs, earnings and billings on contracts	631	309	346
Note receivable from affiliate	(100)	—	—
Prepaid expenses	(140)	(9)	41
Accounts payable	1,833	1,450	(132)
Accrued payroll and benefits	1,165	403	(641)
Current income taxes payable	(149)	54	132
Other liabilities	159	(217)	189
Reserve for loss on long-term contracts	—	—	(1,110)
Other deferred liabilities	375	338	250
Total adjustments	5,873	1,986	3,031
Net cash provided by operating activities	8,359	3,678	5,130
Cash flows from investing activities:			
Capital expenditures	(9,886)	(3,552)	(2,212)
Acquisition of patents	—	(1,158)	(1,251)
Proceeds from sale of property, plant and equipment	979	25	129
Cash acquired in purchase of Modern Industries, Inc.	—	—	41
Other investment activities	(51)	355	(538)
Net cash used in investing activities	(8,958)	(4,330)	(3,831)
Cash flows from financing activities:			
Proceeds from issuance of long-term debt	9,927	6,966	12,767
Net borrowings under line of credit agreements	1,217	110	(70)
Redemption of common stock	—	—	(7,751)
Principal payments of long-term debt	(9,812)	(5,987)	(5,523)
Payment of dividends	(560)	(558)	(622)
Net cash provided (used) by financing activities	772	531	(1,199)
Net increase (decrease) in cash and cash equivalents	173	(121)	100
Cash and cash equivalents at beginning of year	361	482	382
Cash and cash equivalents at end of year	$ 534	$ 361	$ 482
Supplemental disclosures of cash flow information:			
Cash paid during the year for:			
Interest	$ 1,796	$ 1,557	$ 1,155
Income taxes	$ 1,729	$ 1,460	$ 3,693

See accompanying notes to consolidated financial statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation

The consolidated financial statements of the Company include the accounts of Harmon Industries, Inc. and its wholly-owned subsidiaries, Harmon Electronics, Inc., Modern Industries, Inc. (Modern), Electro Pneumatic Corporation (EPC), Consolidated Asset Management Company, Inc. (CAMCO), and an 80% owned subsidiary, Cedrite Technologies, Inc. (Cedrite). Effective January 1, 1989 the accounts of Phoenix Data, Inc. will be included in the Company's consolidated financial statements (see note 2). Significant intercompany accounts and transactions have been eliminated in consolidation.

Nature of Business

The Company principally serves the railroad industry. It is engaged in the design, production and distribution of railroad crossing warning systems, train traffic control systems and radio communication equipment.

Inventory Valuation

Inventories are valued primarily at the lower of cost (first-in, first-out) or market (net realizable value). The components of cost are labor, materials and an allocation of manufacturing overhead.

Property, Plant and Equipment

Buildings, machinery and equipment, office furniture and equipment, transportation equipment, assets capitalized under capital lease agreements and leasehold improvements are being depreciated or amortized using the straight-line method over the estimated useful lives of the assets, which range from two to thirty-three years. Maintenance and repairs are charged to operations as incurred. Renewals and betterments are capitalized as additions to the appropriate asset accounts. Upon sale or retirement of assets, the cost and related accumulated depreciation applicable to such assets are removed from the accounts, and any resulting gain or loss is reflected in operations.

Income Taxes

Deferred income taxes are the result of timing differences in recognizing some items of expense for financial reporting purposes in periods which differ from the recognition for income tax purposes.

Long-term Contracts

Profits on long-term contracts are recorded on the basis of the Company's estimates of the percentage of completion of individual contracts. That portion of the total contract price is accrued which is allocable, on the basis of the Company's engineering estimates of the percentage of completion, to contract expenditures incurred. Profits are not recorded during the start-up phase of the contract, which has been determined by the Company to approximate the initial 15% of design and construction. All losses are recognized in the period during which they become evident.

Cost in Excess of Fair Value of Net Assets Acquired

Cost in excess of the fair value of net assets acquired is amortized on a straight-line basis over ten years.

1. Summary of Significant Accounting Policies continued

Interest Capitalization
The Company capitalizes interest costs on funds borrowed to finance the construction of major facilities. Interest expense of $202,000 was capitalized during the year ended December 31, 1988.

Stock Option Plans
No charges are made to earnings in accounting for options granted because all options are granted at the fair market value at the date of option.

Patents
The cost of patents acquired is being amortized on a straight-line basis over the estimated remaining economic lives of the respective patents, which is less than the statutory life of each patent.

Statement of Cash Flows
During the year ended December 31, 1988, the Company implemented Statement of Financial Accounting Standards No. 95, "Statement of Cash Flows." Accordingly, disclosures for the years ended December 31, 1987 and 1986 have been restated in order to conform to the 1988 presentation.

For purposes of the statement of cash flows, the Company considers all highly liquid debt instruments purchased with a maturity of three months or less to be cash equivalents.

Research and Development
Costs incurred in the creation and start-up of new products or in changing existing products are charged to expense as incurred. Such costs amounted to approximately $4,134,000, $3,318,000 and $2,360,000 for the years ended December 31, 1988, 1987 and 1986, respectively.

Earnings per Common Share
Earnings per common share are based on the weighted average number of common shares outstanding. Effect has been given to common stock equivalents.

2. Acquisitions

On July 9, 1987, the Company acquired for $150,000 in cash 80% of the issued and outstanding common stock of SNP, Inc., subsequently reorganized as Cedrite Technologies (Cedrite). Cedrite is a development stage enterprise formed to manufacture and market composite railroad ties developed with certain patented technologies owned by Cedrite.

Under the terms of the purchase agreement, Harmon Industries, Inc. has provided $3,500,000 to fund working capital requirements of Cedrite during the development stage. During the year ended December 31, 1988, the Company committed to the minority shareholders to provide an additional $2,000,000 in working capital to fund startup costs in return for a pledge of the minority interest in Cedrite. In addition, Cedrite has obtained a $5,400,000 line of credit to fund the acquisition of equipment required for operations (see note 4). Cedrite had no significant operations prior to acquisition; therefore pro forma financial information would not be meaningful.

Cedrite entered into a 20 year development and lease agreement with an investment company to construct Cedrite's primary operating facility. This lease has been capitalized for financial reporting purposes at a value of $2,333,874. Cedrite is obligated to make monthly rental payments of $26,250.

As of July 31, 1986, the Company acquired Modern Industries, Inc. (Modern), a Kentucky corporation, manufacturing railroad safety equipment and providing design and installation services to the railroad industry.

2. Acquisitions, continued

All of Modern's stock was exchanged for 409,998 shares of previously unissued common stock of the Company, with a fair market value of $2,706,000. The fair market value of the Company's common stock issued was determined by independent valuation. This business combination was accounted for as a purchase. The purchase price was allocated to the net assets acquired in relation to their fair values. The allocation of purchase price is presented below:

(Thousands of dollars)	
Current assets	$ 3,891
Current liabilities	1,742
Working capital acquired	2,149
Property, plant and equipment	557
Total purchase price	$ 2,706

The results of operations of Modern since the date of acquisition have been included in the Company's consolidated statements of earnings for the years ended December 31, 1988, 1987 and 1986.

On February 7, 1986, the Company purchased for $1,500,000 certain patents, machinery, equipment and inventory relating to railroad fuel management and train data systems.

As of July 15, 1986, the Company purchased for $600,000, 26.2% of the common stock of Phoenix Data, Inc., a manufacturer of analog-to-digital conversion devices for the aerospace and defense industries. During the year ended December 31, 1987, the Company purchased for $81,250 an additional 5.0% of the common stock, bringing its total ownership percentage to 31.2%. The investment in Phoenix Data, Inc. is accounted for on the equity method. In May of 1988, the Company advanced Phoenix Data, Inc. $200,000 for working capital. As of December 31, 1988, $100,000 remains outstanding. On October 31, 1988, the Company agreed to acquire the remaining shares of common stock as of January 1, 1989, by exchanging 149,630 shares of previously unissued stock of the Company, with a fair market value of approximately $617,000. The fair market value was determined by independent valuation. This business combination will be accounted for as a purchase.

3. Contracts in Progress

Contract costs on uncompleted contracts are as follows:

(Thousands of dollars)	*Costs and estimated earnings in excess of billings*	*Billings in excess of costs and estimated earnings*	*Total*
December 31, 1988:			
Costs and estimated earnings	$ 2,442	$ 8,080	$ 10,502
Billings	2,081	9,321	11,402
	$ 341	$ (1,241)	$ (900)
December 31, 1987:			
Costs and estimated earnings	$ 1,323	$ 5,395	$ 6,718
Billings	1,179	5,808	6,987
	$ 144	$ (413)	$ (269)

All receivables on contracts in progress are considered to be collectible within twelve months.

4. Indebtedness

(Thousands of dollars) December 31,	1988	1987
Short term debt:		
Notes payable to bank under lines of credit	$ 1,772	$ 555

Modern has working capital and equipment lines of credit with a bank totalling $2,000,000, which are collateralized by inventories and equipment, and which accrue interest at the prime rate (10.5% at December 31, 1988). Borrowings on the lines of credit at December 31, 1988 amounted to $1,700,000. Cedrite has a working capital line of credit with a bank totalling $3,000,000, which is collateralized by inventory, equipment and receivables, and which accrues interest at a base rate established by the bank plus 2% (12.5% at December 31, 1988). Borrowings on the line of credit at December 31, 1988 amounted to $72,000.

On December 29, 1986, the Company was extended a $2,000,000 line of credit with outstanding borrowings accruing interest at a base rate established by the bank plus 1% (11.5% at December 31, 1988). This line of credit is secured by 480,231 shares of treasury stock. There were no outstanding borrowings under this line of credit at December 31, 1988.

(Thousands of dollars) December 31,	1988	1987
Long term debt and capitalized lease obligations:		
Note payable to bank under working capital loan	$ 700	$ 4,900
Note payable to bank under fixed asset loan	509	3,681
Note payable to bank under Cedrite working capital loan	3,500	1,364
Note payable to bank under Cedrite equipment loan	4,905	1,056
9% Subordinated convertible debentures	2,100	2,100
Industrial revenue bonds	1,275	1,561
Capitalized lease obligations	2,736	569
Secured notes payable	764	1,126
Unsecured note payable	22	39
Total long-term debt and capitalized lease obligations	16,511	16,396
Less current installments of long-term debt and capitalized lease obligations	2,111	1,775
Long-term debt and capitalized lease obligations, excluding current installments	$14,400	$14,621

The working capital loan is a 30-day demand note, which comes due on January 2, 1992, unless prior demand is made, and bears interest at a base rate established by the bank plus 1% (11.5% at December 31, 1988). The bank has waived the right to demand payment until January 2, 1992, unless an event of default occurs and, accordingly, the working capital loan has been classified as long term debt. The amount available under the working capital loan is limited to the sum of 85% of eligible accounts receivable and 60% of eligible inventory, but in no event more than $13,000,000. The Company had unused working capital loan availability under this agreement of $7,200,000 at December 31, 1988. The secured credit is collateralized by liens against the Company's inventories, receivables, contract rights, and other tangible and intangible properties, both real and personal.

The fixed asset loan bears interest at a base rate established by the bank plus 1% (11.5% at December 31, 1988) with monthly payments of $113,000, including interest, through June 1, 1992.

As part of the acquisition of Cedrite Technologies (see note 2), Harmon Industries, Inc. obtained a $3,500,000 working capital loan to fund development stage

4. INDEBTEDNESS, CONTINUED

activities. The loan comes due in monthly installments beginning August 2, 1989. Interest accrues at a base rate established by the bank plus 1% (11.5% at December 31, 1988). The loan is collateralized by all tangible and intangible assets of the Company.

In addition, Cedrite obtained an equipment loan. The loan makes funds available to purchase equipment for Cedrite's operations. The equipment loan bears interest at the base rate established by the bank plus 1% (11.5% at December 31, 1988). Principal is due in monthly installments beginning October 15, 1988. The loan is secured by all equipment of Cedrite. Cedrite had unused equipment loan availability of $285,000 at December 31, 1988.

On December 31, 1986, the Company issued 9% subordinated convertible debentures (without sinking fund) in the amount of $2,100,000 and due December 31, 1996. Interest payments are due at the end of each calendar quarter. The debentures can be converted into the Company's common stock at a price of $9.25 per share, subject to adjustments, if any, for stock dividends or split-ups. The debentures became callable by the Company at 108% of par value at December 31, 1988, decreasing one per cent per annum through December 31, 1996, provided that prior to January 1, 1990 the debentures are not callable, unless the bid price of the Company's common stock for any 20 trading days within a consecutive period of 30 trading days ending not more than five trading days prior to the date of notice of redemption is at least 150% of the conversion price, as adjusted.

The debenture agreement includes a covenant that would prevent the Company from paying cash dividends on its common stock for the period commencing at the end of the third consecutive quarter in which the Company has experienced net losses and continuing until the Company has achieved three consecutive quarters of net earnings or until subsequent cumulative net earnings have exceeded the cumulative quarterly losses, whichever period is shorter.

Two series of industrial revenue bonds were issued to provide funds to construct and equip manufacturing and research and development facilities. One series of bonds, bearing interest at 73% of the prevailing prime commercial rate, not less than 7.5% (7.7% at December 31, 1988 and 7.5% at December 31, 1987), matures in annual installments of $140,000 plus interest through 1995. The second series of bonds, which provides for the lease of the facilities to the Company by the issuers, bears interest at 10% and matures in annual installments of $150,000 plus interest, through 1990. The lease contains a bargain purchase option which management intends to exercise and, accordingly, the lease has been accounted for as a purchase. The bonds are secured by buildings and equipment with a depreciated cost of $3,253,000, and land with a cost of $164,000 at December 31, 1988.

The various indebtedness agreements contain, among other things, covenants relating to: restrictions on expenditures or commitments for fixed assets in excess of the greater of $2,500,000 per year, exclusive of expenditures related to Cedrite, or 65% of net earnings less dividends paid plus depreciation; maintenance of a positive net worth; maintenance of a minimum working capital of $3,000,000; a maximum ratio of debt to equity of 4.0 to 1 through 1990; and, a limitation on the payment of dividends to 50 percent of net earnings. The Company was in compliance with all such covenants at December 31, 1988.

The capitalized lease obligations have implicit interest rates ranging from approximately 8.9% to 16.7%, and are due in monthly installments, including interest through 2007. They are secured by related assets with a depreciated cost of $2,698,000 at December 31, 1988.

The Company's secured notes payable bear interest ranging from 9.15% to 13% and are due in monthly principal and interest installments through 1991 and in a lump sum payment of $482,000 in 1992. The notes are secured by various equipment

4. Indebtedness, continued

with a depreciated cost of $688,000 at December 31, 1988 and by inventory.

The Company's unsecured note payable bears interest at 8% and is due in monthly installments of $1,638, including interest, through March 1990.

At December 31, 1988, long-term debt maturities and future minimum principal payments under capitalized lease obligations for 1989 through 1993 are:

Year Ended December 31	*Dollars in Thousands*
1989	$ 2,111
1990	1,882
1991	1,781
1992	3,005
1993	1,265

5. Income Taxes

Income tax expense (benefit) consisted of the following components for the years ended December 31, 1988, 1987 and 1986:

(Thousands of dollars) *Years ended December 31,*	*1988*	*1987*	*1986*
Current:			
Federal	$ 1,413	$ 1,540	$ 1,815
State	175	98	141
Total current	1,588	1,638	1,956
Deferred:			
Federal	(281)	(187)	75
State	(27)	(23)	8
Total deferred	(308)	(210)	83
Total income tax expense	$ 1,280	$ 1,428	$ 2,039

Income tax expense for the years ended December 31, 1988, 1987 and 1986 resulted in effective tax rates of 34.0%, 45.8%, and 49.3%, respectively. Effective rates differ from the statutory Federal income tax rate of 34% in 1988 (40% for year ended December 31, 1987 and 46% for the year ended December 31, 1986) because of the following:

(Thousands of dollars) *Years ended December 31,*	*1988*		*1987*		*1986*	
	Amount	*Percent*	*Amount*	*Percent*	*Amount*	*Percent*
"Expected" tax expense at statutory rate	$ 1,280	34.0%	$ 1,248	40.0%	$ 1,903	46.0%
State taxes, net of Federal income tax benefit	98	2.6	45	1.5	80	1.9
Amortization of cost in excess of acquired net assets	69	1.8	73	2.3	63	1.5
Minority interest in loss of consolidated subsidiary	(87)	(2.3)	(18)	(.6)	–	–
Research and experimentation credits	(182)	(4.8)	(119)	(3.8)	(40)	(.9)
Other	102	2.7	199	6.4	33	.8
	$ 1,280	34.0%	$ 1,428	45.8%	$ 2,039	49.3%

5. Income Taxes, continued

Deferred income tax expense (benefit) for the years ended December 31, 1988, 1987 and 1986 consisted of the following:

(Thousands of dollars) *Years ended December 31,*	*1988*	*1987*	*1986*
Deferred taxes on timing differences:			
Depreciation	$ 42	$ 99	$ 205
Deferred compensation	(130)	(135)	(115)
Capitalized interest	73	–	–
Other	(293)	(174)	(7)
	$ (308)	$ (210)	$ 83

6. Business Segment Information

The Company and its subsidiaries operate in two reportable segments, as defined under Statement of Financial Accounting Standards No. 14, "Financial Accounting for Segments of a Business Enterprise." These segments consist of Electronics and related products and Non-electronic products. Intersegment sales were insignificant. Corporate assets represent cash, corporate equipment and other miscellaneous assets which are not related to a specific business segment. Business segment information, for the year ended December 31, 1988, is as follows (no information is presented for the years ended December 31, 1987 and 1986 as all operations and identifiable assets were in the electronics and related products segment):

	Year ended December 31, 1988		
(Thousands of dollars)	*Electronics and related products*	*Non-electronic products*	*Total*
Net sales	$ 64,527	$ 31	$ 64,558
Operating profit (loss)	$ 10,601	$ (1,843)	$ 8,758
General corporate expense			(3,157)
Interest expense			(1,835)
Income from continuing operations before income taxes			$ 3,766
Identifiable assets	$ 32,088	$ 11,758	$ 43,846
Corporate assets			2,259
Total assets			$ 46,105

Depreciation and amortization expense for the Electronics and related products segment and the Non-electronics products segment were $2,254,176 and $316,821, respectively. Capital expenditures for the Electronics and related products segment and the Non-electronics products segment were $1,378,585 and $8,116,371, respectively.

Two customers accounted for approximately $8,336,000 and $6,819,000 of net sales during the year ended December 31, 1988. Four customers accounted for approximately $8,557,000, $7,602,000, $6,340,000 and $5,864,000 of net sales during the year ended December 31, 1987. Three customers accounted for approximately $7,358,000, $6,105,000 and $5,546,000 of net sales during the year ended December 31, 1986.

7. Commitments and Deferred Liability

Leases

The Company has entered into various lease arrangements covering the use of certain manufacturing facilities, sales offices and equipment, all of which are treated as operating leases. Rental expense related to these leases amounted to $1,057,000, $897,000 and $906,000 for the years ended December 31, 1988, 1987, and 1986, respectively. Included in rental expense is expense relating to the lease of administrative office space from a director of the Company at a monthly rate ranging from $900 to $1,500 during the period 1986 through 1988. This lease expires on December 31, 1989.

A summary of noncancellable long-term lease commitments follows:

Years ended December 31,	*Asset leased* *Equipment*	*Real property*	*Total Commitments*
		(Thousands of dollars)	
1989	$ 474	$ 646	$ 1,120
1990	323	454	777
1991	27	236	263
1992	12	187	199
1993	3	143	146
1994-2001	–0–	–0–	–0–

It is expected that in the normal course of business, leases that expire will be renewed or replaced by leases on other properties; thus, it is anticipated that future minimum lease commitments will not be less than the amounts shown for 1989.

Employee Benefits

Prior to June 17, 1985, Harmon Industries, Inc. had a contributory profit sharing plan for substantially all employees who were at least 18 years of age and who had completed six months employment, consisting of at least 1,000 hours service. On June 17, 1985, this plan was amended and converted into an employee stock ownership plan and trust (ESOT). Employer contributions to the ESOT are based on a percentage of pretax earnings. The ESOT has purchased certain Common Stock of the Company (see note 8).

ESOT contributions charged to operating expense were $1,175,000, $597,000 and $763,000 for the years ended December 31, 1988, 1987 and 1986, respectively.

The parent Company and its subsidiaries have various executive bonus plans with bonuses based on a percentage of pretax earnings after employee profit sharing (ESOT) contributions. Accruals made under these plans were $301,000, $204,000 and $238,000 for the years ended December 31, 1988, 1987 and 1986, respectively.

The Company has a nonqualified, unfunded deferred compensation plan and trust for certain key executives providing for payments upon retirement, death or disability. Under the plan, certain employees receive retirement payments equal to a portion of the last three years' average compensation. These payments are to be made for the remainder of the employees' life with a minimum payment of ten years' benefits to either the employee or his beneficiary. The plan also provides for reduced benefits upon early retirement, disability, or termination of employment. The deferred compensation expense was $375,000, $338,000 and $250,000 for the years ended December 1988, 1987, and 1986, respectively.

8. Equity Transactions

During 1986, the Company exercised its right to call certain restricted shares owned by a private investor. On May 16, 1986, the Company's ESOT purchased 75,000 shares of this stock for $9.54 a share or $715,500. Also, on November 16, 1986, the Company purchased 707,258 shares of this stock for $9.88 a share or $6,993,013 and paid $721,875 on the remaining 250,000 shares owned by the investor in order to cancel and terminate certain rights with respect to such shares.

In February of 1988, the Company issued 6,160 shares of common stock in payment of Officers' Bonuses accrued in 1987. The shares were issued at $4.54 per share.

On June 1, 1988 the Company granted a stock option for up to 1,000 common shares to each of the Company's ten directors at that date. The option exercise price is $6.84 per share and they expire May 31, 1990. No options had been exercised as of December 31, 1988.

On September 1, 1988 the Company granted options totaling 250,000 shares to various officers of the Company and its subsidiaries. The option exercise price is $7.05 per share and they expire September 1, 1995. No options had been exercised as of December 31, 1988.

Independent Auditors' Report

The Board of Directors and Stockholders
Harmon Industries, Inc. and Subsidiaries:

We have audited the accompanying consolidated balance sheets of Harmon Industries, Inc. and Subsidiaries as of December 31, 1988 and 1987, and the related consolidated statements of earnings, stockholders' equity, and cash flows for each of the years in the three year period ended December 31, 1988. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Harmon Industries, Inc. and Subsidiaries at December 31, 1988 and 1987, and the results of their operations and their cash flows for each of the years in the three year period ended December 31, 1988 in conformity with generally accepted accounting priniciples.

PEAT MARWICK MAIN & CO.

Kansas City, Missouri
January 30, 1989

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United Missouri Bank of Kansas City, N.A.
10th & Grand
P.O. Box 410064
Kansas City, Missouri 64141-0064
☎ 816–556-7445

For change of address, lost dividends, or lost stock certificates, write or call the above and address your inquiry to:
Securities Transfer Division.

Analyst Contact
Securities analyst inquiries are welcomed. Please call Mr. Vincent D. Burget,
Vice President – Corporate Affairs, at
☎ 816–229-3345.

Stock Trading
The Company's common stock is traded in the over-the-counter market, and it is quoted on the NASDAQ National Market System under the symbol HRMN. Stock price quotations can be found in major daily newspapers and in the *The Wall Street Journal.*

At March 1, 1989, the following securities firms were making a dual auction market in the Company's common stock:

George K. Baum & Company
Brown Church Securities, Inc.
Sherwood Securities
Dean Witter Reynolds Inc.
Merrill Lynch Pierce Fenner & Smith Inc.
Rodman & Renshaw Inc.
Paine Webber, Inc.

Annual Meeting
The Company's annual meeting of stockholders will be held at 2:00 p.m., Tuesday, May 2, 1989, at the Country Club of Blue Springs, Blue Springs, Missouri. All shareholders and any other interested parties are cordially invited to attend.

The meeting notice and proxy materials were mailed to each shareholder with a copy of this annual report. For those shareholders unable to attend the meeting, we urge them to vote their proxies and thus participate in the decisions that will be made at the annual meeting.

Common Stock and Dividend Information
At December 31, 1988, there were 4,477,747 shares outstanding and approximately 750 shareholders of record of Harmon's common stock. Cash dividends are traditionally paid in April and October to shareholders of record approximately two weeks prior. Stock dividends are paid irregularly and at the discretion of the Board of Directors.

The following table sets forth for the periods indicated the cash dividends paid per share of common stock and the high and low bid prices in each of the quarters in the past two years ended December 31, 1988. Price per share and cash dividends have been adjusted for all stock splits and stock dividends, if any.

	Dividends Per Share	Price Range High	Low
Fiscal 1988			
1st quarter ended March	$ .06 1/4	6 1/8	5 1/4
2nd quarter ended June	—	7 1/4	5 7/8
3rd quarter ended September	.06 1/4	8 1/8	6 3/8
4th quarter ended December	—	7 7/8	7 1/8
	$ .12 1/2		
Fiscal 1987			
1st quarter ended March	$ .06 1/4	8 1/2	6 7/8
2nd quarter ended June	—	7 1/8	6
3rd quarter ended September	.06 1/4	7 7/8	6 1/4
4th quarter ended December	—	7 3/4	5
	$ .12 1/2		

Form 10-K
A copy of the Form 10-K, the Company's annual report that is filed with the Securities and Exchange Commission, will be sent free to any shareholder upon written request.

Write to: Mr. Vincent D. Burget,
Vice President – Corporate Affairs
Harmon Industries, Inc.
P.O. Box 1570
Blue Springs, Missouri 64015

Corporate Data

Officers
Robert E. Harmon
Chairman, President

Charles M. Foudree
Executive Vice President – Finance,
Treasurer and Secretary

Ronald G. Breshears
Vice President – Human Resources

Vincent D. Burget
Vice President – Corporate Affairs

Robert G. Clawson
Vice President – Sales & Marketing

Robert E. Heggestad
Vice President – Technology

Stephen L. Schmitz
Vice President, Controller

Subsidiary Presidents
Consolidated Asset Management
Company, Inc.
James R. Meyer, President

Cedrite Technologies, Inc.
James D. Schembs, President

Electro Pneumatic Corporation
Richard E. Risely, President

Harmon Electronics, Inc.
James P. Lemieux, President

Modern Industries, Inc.
Charles R. Tucker, President

Phoenix Data, Inc.
William L. Jones, President

Directors
Robert E. Harmon
Chairman of the Board, President
Harmon Industries, Inc.

Densil Allen, retired
Former Vice President
Unitog Company
Industrial Uniform Manufacturer

Thomas F. Eagleton, Attorney–at–Law
Thompson & Mitchell

Charles M. Foudree
Executive Vice President – Finance,
Treasurer, Secretary
Harmon Industries, Inc.

Robert C. Harmon, retired
Harmon Industries, Inc.
Founder of the Company

Herbert M. Kohn, Attorney–at–Law
Linde Thomson Langworthy
Kohn & Van Dyke, P.C.

*James P. Lemieux, President
Harmon Electronics, Inc.

Gerald E. Myers, Vice President
Electronic Components and
Materials Group
Square D Company

Björn Olsson, Vice President
Investment AB Cardo

Donald V. Rentz, President
Morton Cabinet Company, Inc.

L. Ralph Thomas, retired
Former General Superintendent
Communications & Signal Division
Atchison, Topeka & Santa Fe
Railway Company

** Denotes Advisory Director*

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Kansas City, Kansas

Consolidated Asset Management
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Waycross, Georgia

Electro Pneumatic Corporation
Riverside, California

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Grain Valley, Missouri (3)
Warrensburg, Missouri (2)

Modern Industries, Inc.
Louisville, Kentucky
Jacksonville, Florida
Griffin, Georgia

Phoenix Data, Inc.
Phoenix, Arizona
Englewood, Colorado

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Mooroolbark, Victoria, Australia

Vale-Harmon Enterprises, Ltd.
Dorval, Quebec, Canada
Scarborough, Ontario, Canada

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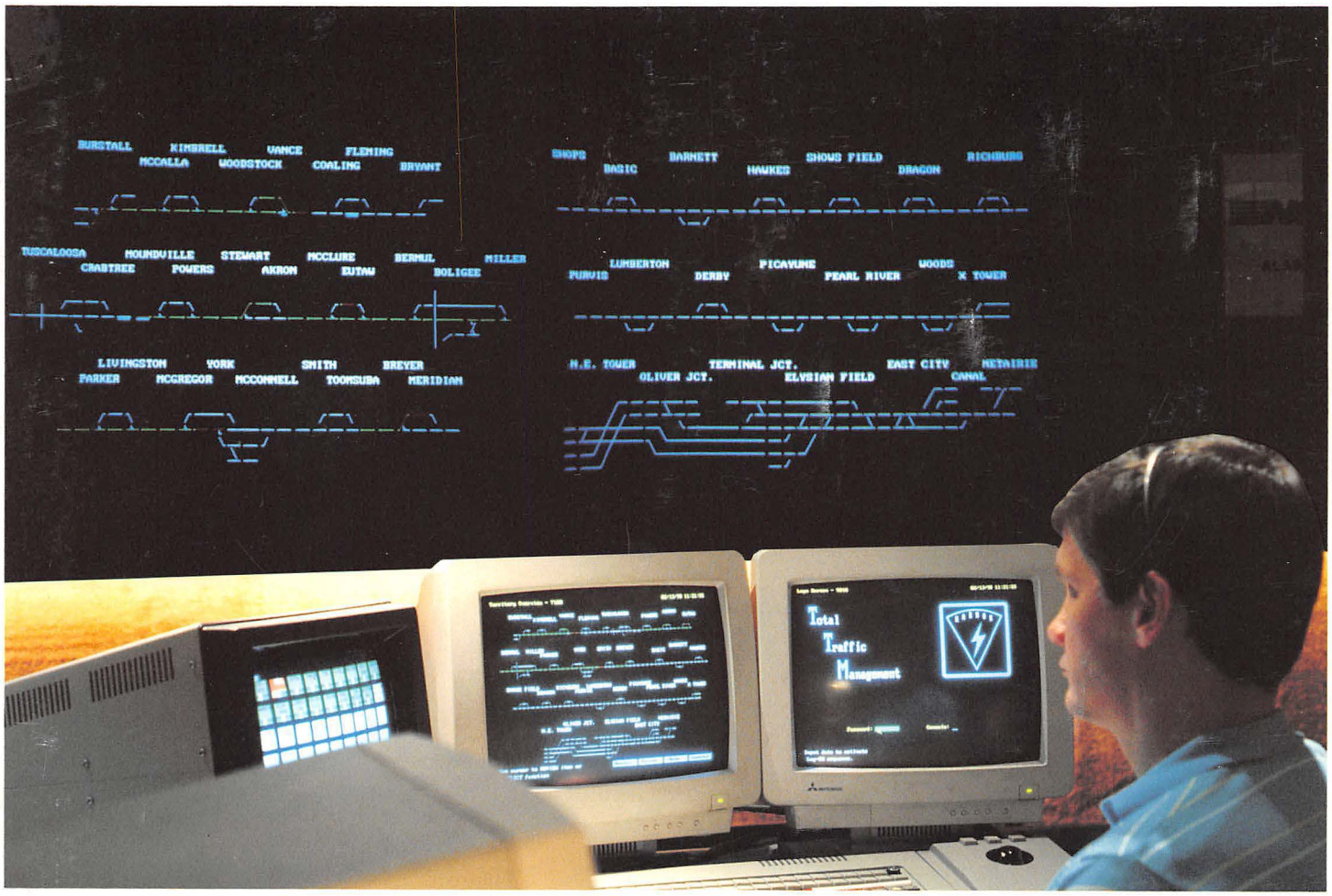
4/25/90



HARMON
INDUSTRIES, INC.

Annual Report 1989

About Harmon

Harmon is a major supplier of communication and control products to railroads throughout North America. It manufactures an extensive line of railroad signal and communication equipment, traffic control systems, rail/highway grade crossing hardware, allied components, and reconstituted railroad ties under a unique process that uses old; discarded ties as a base material.

Harmon also provides a single-source, rapid delivery service for urgently needed railroad components by warehousing commonly-used parts and equipment, which are manufactured both by Harmon and other vendors. Harmon also makes sophisticated data acquisition and analysis systems for industrial, scientific and military uses.

Harmon emphasizes innovation in engineering. Many of its products provide sophisticated electronic solutions to mechanical signal and control problems that impact the railroad industry.

Harmon is headquartered in Blue Springs, Missouri, a suburb of Kansas City. It operates from thirteen facilities: five in Missouri, and one each in Englewood, Colorado; Louisville, Kentucky; Kansas City, Kansas; Riverside, California; Phoenix, Arizona; Griffin and Waycross, Georgia; and Jacksonville, Florida.

Harmon common stock is traded in the over-the-counter market. Its shares are quoted on the NASDAQ National Market System under the symbol HRMN.

Cash dividends, instituted in 1978, have been increased twice. The current annual dividend is 12 1/2 cents per share, which is paid semi-annually at the rate of 6 1/4 cents per share.

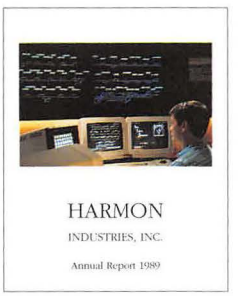
Financial Highlights

For the Year ended December 31,	1989	1988	1987
Net sales	$ 73,281,000	$ 64,558,000	$ 57,068,000
Expenses	$ 71,478,000	$ 60,792,000	$ 53,948,000
Income taxes	$ 643,000	$ 1,280,000	$ 1,428,000
Net income	$ 1,160,000	$ 2,486,000	$ 1,692,000
Net income per share	$ 0.25	$ 0.55	$ .38
Dividends per share	$ .125	$ .125	$ .125
Return on sales	1.6%	3.9%	3.0%
Return on year-end equity	7.9%	18.3%	14.6%
At Year-End			
Working capital	$ 14,444,000	$ 7,037,000	$ 11,870,000
Long-term debt	$ 19,914,000	$ 14,400,000	$ 14,621,000
Approximate number of shareholders[1]	810	746	746
Number of employees	915	821	731
Outstanding shares	4,628,155	4,477,747	4,471,587

[1] Includes only registered shareholders. Since a number of shareholders hold their shares in "street name," the number of individual shareholders is undoubtedly larger than the amount shown.

Cover Photo

Norfolk Southern Dispatcher Jimmy Tynes controls over 300 miles of railroad from a Harmon Total Traffic Management (TTM) system in Birmingham, Alabama.



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Sales increased 13.5 percent to $73 million for 1989, but earnings declined 53 percent to approximately $1.2 million from $2.5 million a year ago. The sales increase is gratifying; earnings are disappointing, yet compared to a year ago, our total business outlook continues to improve.

Our sales figures clearly show a continuing increased acceptance of our products over those of our competitors. We consider this critically important because it assures us that our product research and subsequent offerings are right on the mark. We are providing what the railroad industry wants and at prices that are competitive, which are the prime goals of any supplier. Our position as the dominant and preferred supplier of railroad signal equipment is being confirmed every day in the marketplace.

Our profit picture is not meeting our budgeted goals. Our newer ventures are simply taking a longer time to reach break-even and require a greater dollar investment than we had originally projected. We are hopeful this drain on profits by our fledgling companies will be reversed or at least greatly reduced in 1990.

Our comprehensive business plan for many years now has been to nourish start-up ventures alongside our established subsidiaries. We reasoned that if we could keep the cost to nurture new companies in line with the anticipated increased profits of our veteran subsidiaries, we could expand rapidly and comfortably. As each new company's initial losses turned to profits, their effect on Harmon's corporate profits would be substantial.

The concept is sound; our projections of the time and money needed to turn our start-ups profitable were not. Our two major subsidiaries, Harmon Electronics and Electro Pneumatic, are doing considerably better than projected. Our three new companies are moving forward at a much slower pace than we initially estimated.

Yet despite these setbacks, I am bullish on our overall business outlook. First, the recent trend of our newer companies is improved. Cedrite, despite heavy (but somewhat anticipated) losses to date, is now achieving material gains in output. In early 1990, 5,000 ties were shipped in January; 11,000 in February, and an estimated 15,000 in March. At this rate, we anticipate reaching break-even later this year. If this is achieved, the absence of Cedrite losses would have a profound beneficial effect on corporate earnings.

Robert E. Harmon

Chairman of the Board

and President

Modern Industries, which was saddled with inferior products already in the hands of customers at the time of acquisition, reduced its losses in 1989. More important, it introduced several major new products of its own design last year, thereby giving it a technologically superior product base from which to go forward.

CAMCO, our warehousing service venture, produced revenues of $2.1 million in its first year. Early first quarter shipments suggest substantial increases in sales for 1990.

New product developments last year were impressive. We installed our first major Total Traffic Management system, which is featured on the cover of this year's report, and an enhanced version of our locomotive speed limiter. Other new products include an advanced signal controller, hot box detector-scanner and a new grade crossing control unit.

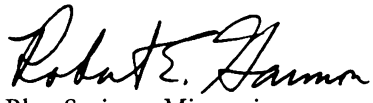
We also increased penetration in two markets last year — the domestic rapid transit industry and the export market. Prospects are real for additional international business in China and India, and we look to enhance our established markets in Canada and Australia, as well.

Throughout its history, Harmon has relied on innovation to move forward. Unfortunately, this is a quality that does not march evenly on a monthly or even yearly pace. And this often makes for uneven earnings comparisons. Yet, innovation is the prime factor that drives Harmon and has enabled us to surpass our competitors in almost every market where we have launched a challenge.

Innovation is also the prime mover in our longer range strategy to diversify outside the railroad industry to reduce our dependence on rail/highway grade crossing products, which historically have been dependent on the allocation of Federal funding, an inconstant source at best.

Given time, I am confident the delicate balance we now have between our newer ventures and our established veterans will tip in our favor, and Harmon will achieve its major goals.

Before closing, I want to pay tribute to Richard E. Risely, the President of Electro Pneumatic Corporation, who will retire this year. Dick is known throughout the signal industry as the quiet genius who brought electronic controls to remote tracksides many miles from civilization. We knew him simply as one of the best total managers we have ever had.



Blue Springs, Missouri
March 19, 1990

Harmon subsidiary presidents are (seated, left to right): Richard E. Risely, Outgoing President, Electro Pneumatic Corp.; James P. Lemieux, Harmon Electronics, Inc.; James D. Schembs, Cedrite Technologies, Inc.; (standing, left to right): Tim J. Weeks, Modern Industries, Inc.; Noel B. Smith, Incoming President, Electro Pneumatic Corp.; James R. Meyer, Consolidated Asset Management Co.; and Lloyd T. Kaiser, Phoenix Data, Inc.

At year-end 1989, Harmon Industries, Inc. (Harmon) owned six subsidiaries; five were in full operation, and the sixth was in a start-up development phase for the second consecutive year.

Current operating subsidiaries include Harmon Electronics, Inc. (HEI), Electro Pneumatic Corporation (EPC), Modern Industries, Inc. (Modern), Consolidated Asset Management Company, Inc. (CAMCO), and Phoenix Data, Inc. (PDI). All are wholly owned. The start-up subsidiary is Cedrite Technologies, Inc. (Cedrite), which is 80% owned.

HEI is the oldest, largest and most profitable subsidiary. It makes electronic controls for rail/highway grade crossings, communication and safety-related products, and traffic control systems. Its forte is delivering high-tech solutions to railroad problems. Its operations are conducted from four plants, all in Missouri. Harmon's principal research efforts are also conducted at HEI. See pages 6-9.

EPC ranks second only to HEI in profits and has grown rapidly since its acquisition in 1984. Its principal product lines are electronic track circuits and electronic interlockers. These products control block signals that direct the movement of trains and the movement of switches and signal positions where two or more tracks intersect. See pages 10-11.

Modern, acquired in 1986, fabricates heavy metal cantilevers, trackside signal cases, and miscellaneous hardware commonly found at signal locations. It also installs and wires control equipment in its metal cases and ships the entire package as a system. It moved its manufacturing operations from Louisville, Ky. to Griffin, Ga. in 1988. See pages 14-15.

CAMCO is a service enterprise that began operation in early 1988. It maintains an inventory of commonly-used railroad equipment and supplies at locations convenient to its customers. It is Harmon's smallest subsidiary. See pages 18-19.

PDI, acquired in early 1989, manufactures data acquisition and test measuring systems for industrial, scientific and military uses. See pages 16-17.

Cedrite has a patented technology to manufacture reconstituted railroad ties out of discarded conventional ties. It began shipments in July of 1989 and is presently debugging its automated production line to gradually achieve forecasted shipment levels. See pages 12-13.

HEI, the company's largest and most profitable subsidiary, surpassed 1988's excellent performance and established record levels for sales and earnings in 1989. Sales were aided by a strong showing in printed wiring boards and a new product (the *Ultra Cab* system) which packages an automatic train control in a single, compact unit, and from increased industry perception of the quality built into every HEI product.

HEI Quality

The railroad industry is stressing quality as never before, and HEI is meeting that challenge. Last year, Conrail and Union Pacific audited our entire process to evaluate the quality steps we build into our system. After exhaustive analysis, both certified us as "Quality Suppliers." As evidence of the industry-wide demand for quality, CSX Corporation included HEI on its short list of 1990 invitees to its "Quality Seminars," and Chicago & North Western Transportation Co. selected HEI as a supplier to commit to its formal quality goals and principles.

Internally, HEI is stressing quality within all departments — manufacturing, design, and procurement, for example. In 1989, HEI incorporated a Safety Assurance department within its R&D–further evidence that quality is a company-wide effort and not just a Quality Assurance Audit factor.

Statistical Process Control (SPC) will become more of an integral part of our products' manufacturing process in 1990. SPC is a statistical tracking tool to pinpoint the causes of problems as they occur and a means to prevent their happening again. SPC is a major weapon in the battle to eliminate rework and scrap, which for too long have been the costly results of US industrial methods.

Productivity Gains

As in 1988, productivity gains increased margins in 1989 despite continuing strong price competition. HEI achieved a higher level of productivity because of product design refinements that speeded production, improvements in purchasing and inventory controls, and better use of the workforce.

Printed Wiring Boards

Sales of printed wiring boards increased 25 percent last year to $5.1 million. Its instant identity with Harmon Electronics was a major factor in its greater sales last year. A substantial investment in equipment and technology is planned for the next several years. These expenditures are designed to enhance our multi-layer board capability both for our internal needs and our expanding external market base. We anticipate a major expansion of outside sales over the next four years.

Product Innovations–1989

HEI's prime focus is the design and manufacture of products that improve its railroad customers' operating efficiency or their safety. HEI is developing a family of products around a small but pow-

Linda Baker checks Harmon radios on the new Marconi tester which eliminates many steps in the testing phase of production.

Mike Ashton readies a rack of Ultra Cab units for shipment for use in commuter cars in Pennsylvania.

erful and rugged computer called the *Harmon Logic Controller* (HLC). These products offer a variety of digital data communications techniques, enabling elimination of many older systems that depended on electromechanical relays and pole lines with high maintenance costs.

Versions of the HLC may be used at dispatching centers, intermediate radio transmitter sites and at trackside signal sites to handle the data transmissions needed to control and monitor the signalling devices. By module substitution, the same basic product can communicate over radio, phone line or the railroad's own wires, allowing phased installation at a pace comfortable to the railroads.

The HLC can also yield big maintenance savings by enabling control offices to perform remote diagnostic tests of wayside signal equipment even though the wayside may be hundreds of miles from the control office.

Last year, HEI hosted two engineers from the People's Republic of China to share knowledge and data about train inspection systems. Subsequently, we received a sizable order and quotation requests for even larger amounts of product. We are seeking to establish similar exchanges with railroads in Poland and India.

HEI not only provides innovative solutions to customer needs, it also applies the same thinking to its internal management.

Homeworker Program

HEI has a homeworker program which has proven to be a cost effective means to balance natural swings in production demands. In peak demand periods, some light assembly work is done in the homes of Harmon retirees, ex-employees and new hires. The new program has enabled HEI to control its variable production costs while simultaneously safeguarding job security for permanent employees.

Electronic Data Interchange

HEI also uses electronic data interchange to speed up and simplify clerical matters with its customers. Purchase orders are now received and verified via electronic transmissions. Inquiries concerning shipments, billings, etc. that previously were sent by mail, are now handled electronically through a constant flow of messages and information that now appears instantly on computer screens.

HEI continues to seek ways to improve its products and simultaneously lower its costs, and the results of these ongoing efforts are reflected in its market dominance.

Electronic Data Interchange (EDI) enables Harmon to receive purchase orders almost instantly, reducing transit time in the mails.

The latest technology checking the latest technology: a CRT inspection system for detecting flaws in surface mount device (SMD) boards.

Roger Geary uses a Cirris system to check wire leads for grounding. This machine can perform diagnostics in less than a minute. The old method could take up to 8 hours .

EPC employees at every level are involved in solving production problems. This has provided a wealth of cost-saving ideas that have made EPC the undisputed leader in its field. Sharon Reed (right) instructs a new employee on the proper method for inserting components on boards used in Electro Code systems.

For the fourth consecutive year, EPC set new highs in sales and earnings. It was an outstanding achievement in a year where railroad purchasing practices were level, at best.

EPC's success in achieving a leadership position in an industry that demands fail-safe quality, optimum performance and extremely competitive pricing is no accident. It is the result of putting smart ideas to work, introducing manufacturing innovations that reduce production costs, and keeping a sharp, narrow focus on new product development.

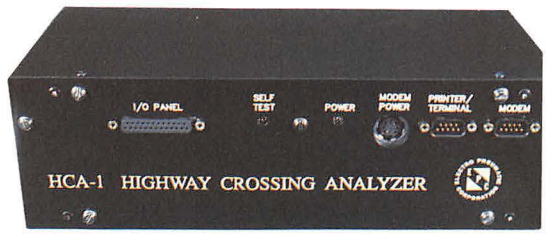
Innovation is king at EPC. Production techniques are analyzed constantly and include expanded cross training and new ways to enhance team production. New materials and processes were introduced into the manufacturing process that virtually phased out the need to handle industrial chemicals.

Perhaps the most important innovation is the active inclusion of all EPC personnel in finding solutions to improve products and reduce costs. By listening to those closest to the manufacturing process, many unnecessary production steps have been eliminated. EPC engineers work in a new world of science. In effect, they reduce "exotic" technology to practical applications in the real world of modern transportation.

Last year, the basic product line of Electro Code signal controls was improved via software upgrades. The Electro Logic system was expanded to include a remote diagnostic feature that will reduce expensive maintenance costs for the railroads.

AMTRAK installed EPC Electro Logic, Electro Code, and cab signal devices plus products from other Harmon subsidiaries on its Atlantic City to Philadelphia run. These products in combination control interlockings, wayside signals and engineer cab signals, making that stretch of track the most advanced of its kind in the country.

An especially innovative new product from EPC is the Highway Crossing Analyzer. It monitors the activity of safety equipment (gate arms, flashing lights, battery levels, etc.) at highway grade crossings. Besides recording all operations, it reports any problems automatically to a remote "trouble desk" from which a signal maintainer can be dispatched promptly. The Highway Crossing Analyzer will materially reduce the cost of maintenance while improving reliability at such locations which are now physically inspected by field personnel on a regular basis. The new product, which is now being evaluated in the field, will be a part of 1990 product sales.



The Highway Crossing Analyzer. Its remote monitoring capability reduces costly physical inspections and improves safety by detecting and reporting malfunctions as they occur.

Innovation is the essence of the Cedrite reconstituted railroad tie. No other company in the world is making a tie like Cedrite's. We take the railroads' worn out ties, grind them into small particles, and add a proprietary bonding ingredient. We compress the mixture into a sturdy steel mold, bake it under high temperatures, and then extract a new tie. It outperforms and outlives the old, wooden tie treated with creosote, a chemical that the EPA has declared a health hazard.

The Cedrite tie is a technological triumph. Compared to a wood tie, it is stronger, more durable, and resists natural rot and insect infestation. It is virtually immune to warping and splitting. Its higher density provides a better "grip" for fasteners, reducing the problem of loose rails. Installation requires no special equipment.

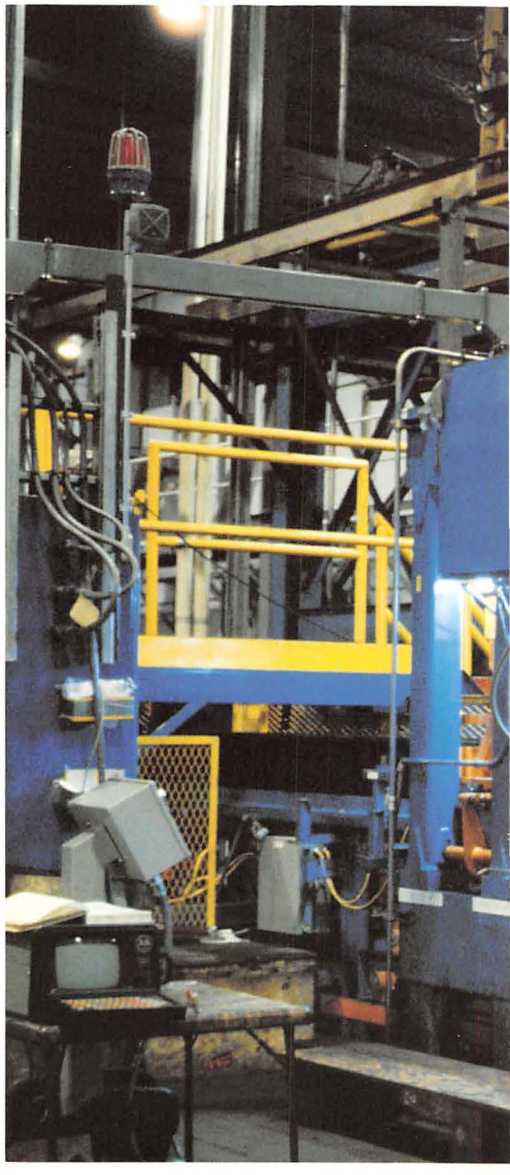
But nobody said manufacturing this new tie would be easy, and it isn't. Since no one had ever manufactured a tie like this before, Cedrite had to innovate heavily. It had to design the factory layout and draw up the requirements for the heavy equipment needed to make the new tie.

There have been problems. The first press had to be reinforced before it could handle the tremendous forces exerted on the molds. Delivery of the second press was delayed until a new design was approved. Extracting the ties from the molds proved difficult and created a production bottleneck. In addition, certain process problems developed that caused an unacceptable scrap rate.

Installation of the second press is underway, and it should be operational by the end of the first quarter. Equipment to overcome the extraction bottleneck went on-line in November, 1989 solving a critical problem. Other parts of the production process are being reworked to improve reliability and throughput.

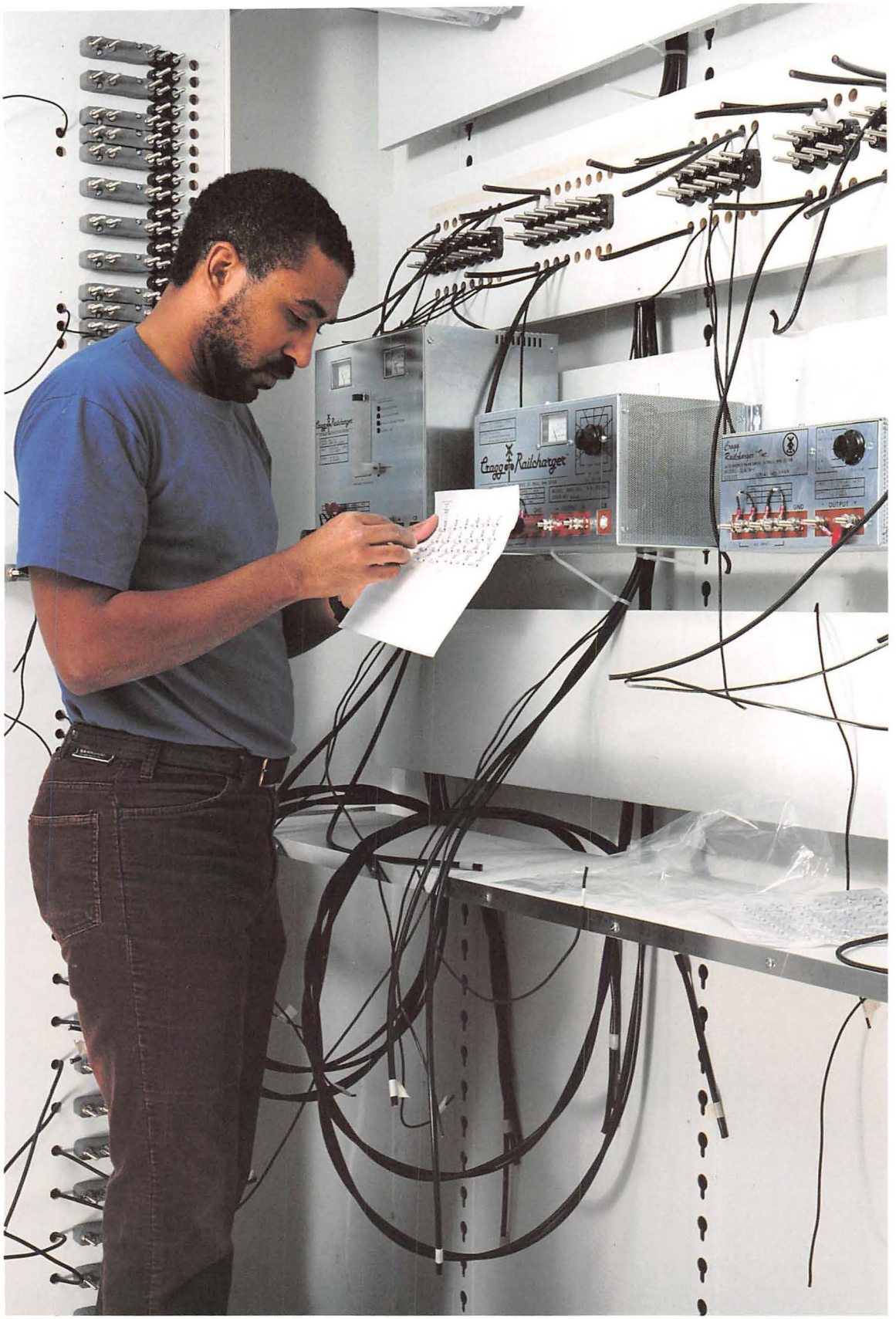
These assorted problems delayed the program by nearly two years. Delays cost dearly. Interest costs, plus costs for engineering, new equipment and operating costs could not be offset with limited production, and operating losses for the second year of operation rose to $3.5 million.

Notwithstanding, Cedrite made substantial progress last year. Ties were shipped to four railroads. The average daily production rate increased from 100 ties in July to 250 in December and to an estimated 500 by March of 1990. Cedrite progressed from a one-shift operation in June to a 24 hour, seven day a week operation by year-end. As the work crews' skills increase, production machinery problems are resolved and the second press goes on-line, Cedrite expects to reach break-even output by late 1990.



Forming line, where chips are metered into molds prior to pressing.

Don Henderson oversees operation of the pin unlock machine. Part of the tie extractor line installed late in 1989, this system has helped eliminate delays.



Christopher Holloway wires a wayside signal house at Modern's new manufacturing operation in Griffin, Georgia. Last year, Modern began painting the interior insulation boards prior to installing them in the enclosures. Prepainting has resulted in significant labor savings.

Despite flat sales for 1989, Modern made progress toward restoring its profitability and market presence. It reduced its operating losses in 1989, and last year it also introduced a grade crossing cantilever of advanced design.

Throughout the year, Modern struggled to solve difficulties encountered in 1988. Structural weaknesses and design flaws were discovered in certain types of grade crossing cantilevers and components manufactured and sold before Harmon's ownership. Remedial action, including the repair or replacement of defective cantilevers, was taken promptly, but at considerable cost to Modern.

During 1989, Modern's management was beset with various manufacturing and operational inefficiencies that developed when production was shifted from its facility in Louisville, Kentucky to its new plant in Griffin, Georgia. Progress in resolving these deficiencies was slower than expected.

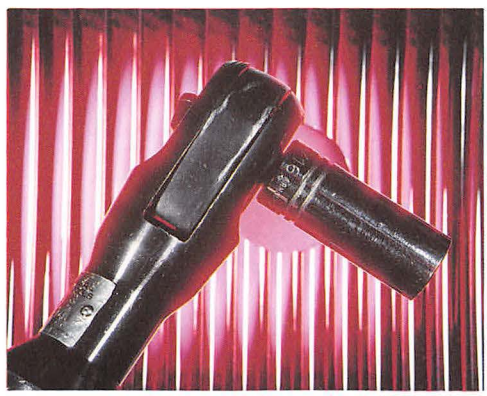
Last October, Harmon brought in new management, appointing Tim Weeks as its new president and chief operating officer. Mr. Weeks is a 20-year veteran of the Harmon system.

Weeks began a concerted drive to improve product quality and customer service, and introduced formal programs for material resources planning. Some progress is already evident. Quality has definitely improved; inventory turns are increasing, and collection of receivables is better. Recent reductions in fixed costs are promising.

Although Modern is essentially a heavy metals manufacturer, where margins are traditionally slim, it is a vital cog in Harmon's total strategy. It provides the hardware, contract engineering and field construction services that enable Harmon to bid successfully on entire systems.

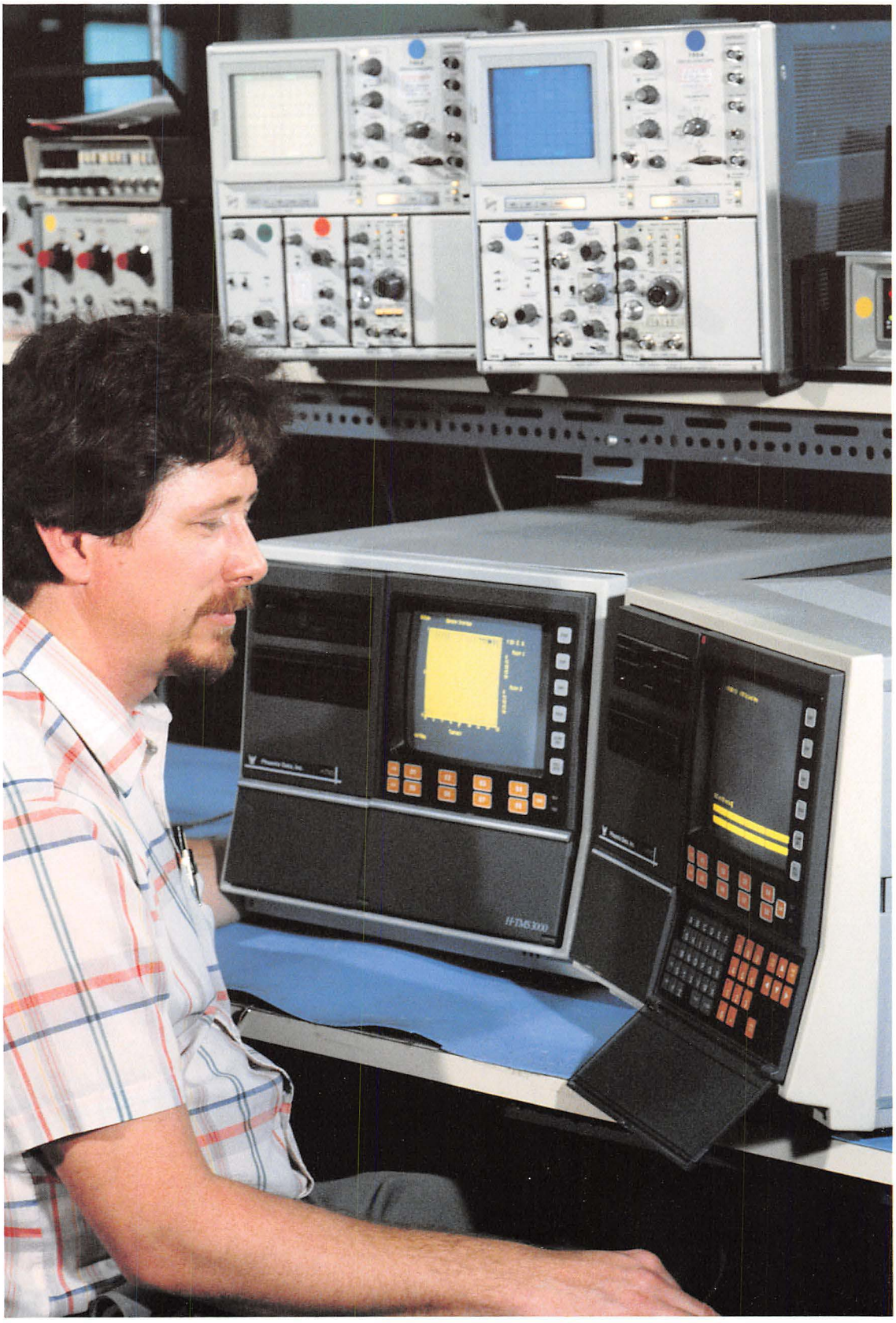
Many large railroad signalling projects require not only sophisticated electronic products, but also system engineering and assembly of these products into wayside cases and housings. The ability to provide these latter services greatly enhances the sales of the electronics.

Modern's goal is to reach an efficiency level where it provides reasonable profits to Harmon from its own activities in addition to its prime function – the supplier of heavy metal products and ancillary services that enable the Harmon companies to bid successfully on large railroad signal projects.



Modern last year converted many manual operations to automated tools. Air-powered impact wrenches are now used to assemble all rail/highway crossing light units.

Bill Koch checks out a Test Management System (H•TMS) prior to shipment. The H•TMS is used to analyze data from such areas as automotive crash and electrical generator testing, as well as magnetic tape certification.



Phoenix Data, Inc. (PDI), our wholly-owned subsidiary as of January 1, 1989, was a severe disappointment. Here is a summary of the facts.

Harmon acquired 31 percent of PDI during 1986 and 1987 for $681,250. On January 1, 1989, it exercised an option to purchase the remaining 69 percent for $617,000 in Harmon stock, making the total purchase price approximately $1.3 million.

We bought PDI to expand into markets outside the railroad industry. PDI manufactures data acquisition and data conversion products for the military, aerospace, scientific and industrial communities. It had recently acquired Honeywell's H•TMS line of test management products, which are regarded highly throughout the industry.

Shortly after we completed the total purchase, operations began to fall far behind budgeted target levels. At mid-year we discharged the senior management that accompanied our buyout, and brought in Lloyd Kaiser, a Harmon veteran, as president to run PDI.

After gaining control, we uncovered serious operational problems. Moreover, with the prospects for peace improving worldwide, we encountered sales delays from our military and aerospace customers.

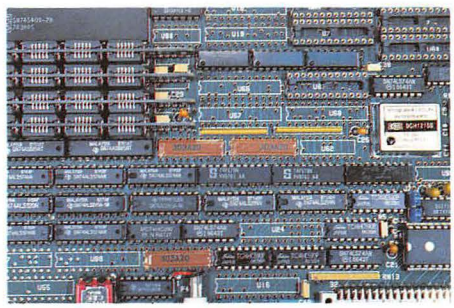
We took decisive action. Deficiencies in operations were addressed immediately. Quality and margins were major areas of concern. Both are now reflecting significant improvement.

Fixed expenses were high relative to sales. We hired a direct sales force and began a stepped-up advertising campaign in data acquisition trade journals to gain maximum product exposure as quickly as possible as increased sales volume is the surest method to offset fixed expenses.

Despite many unanticipated operational problems, the products themselves are excellent, particularly the H•TMS line. The engineering staff that developed the H•TMS joined PDI when Honeywell sold that product to PDI.

These former Honeywell engineers have since completed development of two new products: an electric generator test system and a magnetic tape certification system (MTC). The generator test system will enable the government to improve its existing MIL-STD 705B test procedures for testing frequency and voltage regulation of electrical generators. MTC meets an urgent need of the intelligence community: an ability to record vast amounts of data on magnetic tapes that have zero defects. MTC is the first equipment available that automates and certifies the verification of tape quality.

Management is confident that PDI products provide Harmon with a meaningful entry into non-railroad markets, and that its operational problems can be resolved.



Integrated circuits (IC) are an integral part of the control processor board for the H•TMS 4000 system. IC's contain the equivalent of hundreds of transistors, resistors and diodes, allowing complex tasks to be completed rapidly.

Consolidated Asset Management Company (CAMCO) is a bold, imaginative venture by Harmon to expand its market base. CAMCO is a warehouse operation that provides a needed service — rapid delivery of many components and kit assemblies common to most railroads. That service also includes providing security and storage for customer-owned individual signal and communication products, track materials and locomotive parts.

Its innovative concept was validated dramatically last year when it made rapid deliveries of urgently needed repair parts in the aftermath of hurricane Hugo.

CAMCO is one of a few companies providing this type of service in North America. It is also Harmon's sole non-manufacturing venture. Its customers are Class I railroads and short-line railroads operating throughout the United States.

CAMCO conducts its operations from a warehouse in Waycross, Georgia that was expanded from 12,000 to 18,000 square feet last year. By year-end, it carried double the selection of parts it offered at the start of the year.

Initial prospects are promising. In its first full year of operation, CAMCO developed sales of $2.1 million.

Warehousing is a narrow margin business, but the market for warehouse services is increasing. Many railroads are reducing the number of personnel they keep on a full time basis to maintain inventories for routine installation and emergency repair because that work is sporadic and unpredictable.

Over the longer haul, management looks to buy parts at lower cost than any single railroad can obtain through volume purchase discounts, thereby expanding its margins. This strategy depends on CAMCO's ability to sign up other Class I railroads. To date, several other Class I railroads have expressed an interest in the CAMCO warehouse concept and even identified products that CAMCO might store for them. CAMCO did expand its base last year with the addition of several short-line railroads.

CAMCO management believes it can operate profitably in the future by reducing its fixed costs, gaining better control over inventories, shaving its purchase costs, and increasing volume. That is the urgent challenge facing CAMCO for 1990.

Lorrie Bennett (left) and Terri Smith fill orders for a complete rail/highway grade crossing system.

Mike Clark loads a Modern Industries' signal case for shipment as part of CAMCO's rapid delivery service.

Harmon Industries, Inc. Corporate Officers

Harmon Industries' staff officers are (seated, left to right): Charles M. Foudree, Executive Vice President–Finance; Robert E. Harmon, Chairman of the Board and President; Robert G. Clawson, Vice President–Sales and Marketing; (standing, left to right): Stephen L. Schmitz, Vice President–Controller; Vincent D. Burget, Vice President–Corporate Affairs; and Ronald G. Breshears, Vice President–Human Resources.

Absent from photo: Robert E. Heggestad, Vice President–Technology.

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Selected Financial Data *

(In Thousands, except per share items)

(In thousands, except per share items) December 31 [1]	1989	1988	1987	1986
Operations				
Net sales	$ 73,281	$ 64,558	$ 57,068	$ 47,223
Cost of sales	54,947	46,734	41,492	32,693
Gross profit	18,334	17,824	15,576	14,530
Selling, general and administrative expenses	15,270	12,493	10,856	9,362
Other operating expenses (income)	(28)	(14)	38	80
Operating income	3,092	5,345	4,682	5,088
Other expense	1,289	1,579	1,562	950
Earnings from continuing operations before income taxes	1,803	3,766	3,120	4,138
Income taxes	643	1,280	1,428	2,039
Earnings from continuing operations	1,160	2,486	1,692	2,099
Discontinued operations	—	—	—	—
Net earnings	$ 1,160	$ 2,486	$ 1,692	$ 2,099
Effective income tax rate	35.7%	34.0%	45.8%	49.3%
Return on sales	1.6%	3.9%	3.0%	4.4%
Return on year-end equity	7.9%	18.3%	14.6%	20.0%
Weighted average outstanding shares	4,645	4,509	4,472	4,854
Per Share Data [2]				
Net earnings	$ .25	$ .55	$ .38	$ .43
Cash dividends	.125	.125	.125	.125
Book value	3.19	3.03	2.60	2.34
Price/earnings ratio range [3]	23.0-35.0	9.5-14.8	13.2-22.4	15.4-27.3
Other Data (At Year-End)				
Total assets	$ 50,355	$ 45,717	$ 38,738	$ 34,045
Working capital	14,444	7,037	11,870	11,599
Long-term debt	19,914	14,400	14,621	13,793
Stockholders' equity	14,756	13,557	11,604	10,470
Current ratio	2.08:1	1.45:1	2.11:1	2.36:1
Quick assets ratio	.90:1	.61:1	1.03:1	.96:1
Debt to equity ratio	2.40:1	2.37:1	2.34:1	2.25:1
Capital additions	4,589	9,886	3,552	2,212
Depreciation and amortization	3,185	2,834	2,531	2,074
Outstanding shares	4,628	4,478	4,472	4,472

(1) The Company changed its year-end to December 31 from September 30, effective December 31, 1981.

(2) Adjusted for all stock splits and stock dividends through December 31, 1989, inclusive.

(3) High and Low prices for the year divided by earnings per share for the year.

* Unaudited

	Years ended September 30,[1]						
	1985	1984	1983	1982	1981	1980	1979
	$ 52,993	$ 44,445	$ 29,618	$ 27,783	$ 30,248	$ 27,693	$ 21,113
	36,521	32,669	22,355	20,120	21,841	21,482	15,907
	16,472	11,776	7,263	7,663	8,407	6,211	5,206
	8,497	6,332	4,748	4,420	4,677	3,723	3,131
	99	25	(38)	(21)	(100)	5	6
	7,876	5,419	2,553	3,264	3,830	2,483	2,069
	1,746	768	551	606	799	541	234
	6,130	4,651	2,002	2,658	3,031	1,942	1,835
	2,909	2,214	900	1,082	1,335	788	800
	3,221	2,437	1,102	1,576	1,696	1,154	1,035
	—	—	—	—	(6)	184	340
	$ 3,221	$ 2,437	$ 1,102	$ 1,576	$ 1,690	$ 1,338	$ 1,375
	47.5%	47.6%	45.0%	40.7%	44.0%	41.4%	44.3%
	6.1%	5.5%	3.7%	5.7%	5.6%	4.8%	6.5%
	22.9%	15.6%	8.5%	12.9%	15.4%	14.1%	16.3%
	4,430	4,733	4,650	4,650	4,650	4,650	4,650
	$ .73	$ .51	$ .24	$ .34	$ .36	$ .29	$ .30
	.125	.0875	.075	.075	.075	.0625	.0625
	2.94	3.21	2.78	2.62	2.35	2.04	1.82
	8.2-16.1	7.8-13.7	14.3-28.2	7.9-12.1	7.9-18.8	8.0-18.5	3.4-11.9
	$ 30,111	$ 30,627	$ 21,880	$ 19,330	$ 19,219	$ 21,353	$ 15,495
	9,962	12,370	10,510	9,052	9,031	10,224	6,816
	6,604	6,752	3,956	3,324	3,638	6,019	1,474
	14,038	15,579	12,925	12,172	10,945	9,499	8,452
	2.17:1	2.65:1	3.35:1	3.63:1	3.08:1	2.84:1	2.27:1
	.90:1	1.07:1	1.27:1	.94:1	1.04:1	.98:1	.80:1
	1.14:1	.97:1	.69:1	.59:1	.76:1	1.25:1	.83:1
	2,919	1,467	1,082	1,908	1,873	1,687	1,073
	1,775	1,353	1,082	996	792	565	418
	4,769	4,850	4,650	4,650	4,650	4,650	4,650

• RESULTS OF OPERATIONS

Sales increased 13.5% in 1989 to $73.3 million. This followed a 13.1% sales increase in 1988 to $64.6 million, which constituted an $7.5 million gain over 1987 sales. Earnings decreased 53.3% to $1.2 million in 1989; 1988 earnings of $2.5 million reflected an increase of 46.9% from $1.7 million reported for 1987. A portion of the sales increases for each of the past three years includes the sale of products obtained through purchase of product lines or outright acquisition of entire companies. Although the company generally seeks to acquire other products or companies that expand its own lines or provide it entry into new markets, its commitment in Cedrite precludes any acquisitions presently. The table below should be read in conjunction with the following commentary.

GROSS SALES BY PRODUCT FUNCTION*

(In thousands) Years ended December 31,	1989		1988		1987	
	Amount	%	Amount	%	Amount	%
Railroad Crossing Warning Systems	$23,532	32.6%	$26,777	40.9%	$25,486	44.1%
Train Inspection Systems	4,282	5.9	3,318	5.1	2,034	3.5
Signal Control Track Circuits	8,214	11.4	7,546	11.5	5,342	9.2
Custom Products for the Railroads	14,011	19.4	15,467	23.6	11,891	20.6
Radio Communication Equipment	1,690	2.3	2,341	3.6	4,038	7.0
Printed Wiring Boards	5,092	7.0	4,332	6.6	2,837	4.9
Other	15,439	21.4	5,667	8.7	6,162	10.7
Total	$72,260	100.0%	$65,448	100.0%	$57,790	100.0%

*Sales volumes shown above are gross totals and do not include cash discounts, deferred contract revenue, etc. As a result there are differences between the figures in this table and those presented in the audited Consolidated Statements of Earnings, which appear on page 32 in this annual report. The differences do not affect the validity of the discussion and analysis which are presented below.

Sales Analysis

The majority of the sales increase in 1989 reflected the sales contributions of CAMCO, Cedrite and Phoenix Data; the balance of the increase was recorded by HEI and EPC as 1989 sales at Modern were essentially flat. The classification, *Other*, shows a $9.8 million sales gain for 1989. It reflects CAMCO's 1989 sales of $2.1 million (versus $34,000 in 1988); it includes all sales of PDI, which were ***not included*** in prior years because of Harmon's then minority stock ownership, and 1989 sales of Cedrite, which had no sales the prior year. The sales gain in 1988 principally reflected increased market demand. The classification, *Custom Products for the Railroads*, are packages of several products sold as a unit.

Selling prices remained extremely competitive throughout the past three years. Some price reductions were granted; virtually no price increases were obtained, and severe price competition shows no sign of abating. Market penetration in 1989 remained approximately level with that of 1988 and 1987.

The strength of our market is conditioned somewhat by the degree to which monies are requested from the federal government's fund to improve the safety at rail/highway grade crossings. In general terms, the federal government has authorized up to $160 million annually for the installation of safety-related devices at crossings—gates, bells, warning signals, etc. The funds are used both for new installations and for upgrades to existing crossings. Usually, state and local governments and railroads may share up to 10% of the cost of an installa-

tion, with the federal government picking up the remaining 90%. In general, the state will request those federal funds after it has approved a grade crossing installation proposal of a railroad. These proposals ebb and flow as railroads each year determine a wide range of construction priorities, many of which extend outside the scope of grade crossing installations. In 1989 requests for federal funds were up substantially from the previous year. However, it is difficult to determine if this is a trend that will continue through 1990.

Gross Profit

Gross profit declined 2.6 percentage points in 1989 chiefly because Harmon had virtually no sales gains in high profit items; experienced thin margins in CAMCO and PDI sales and substantial negative margins in Cedrite sales. In 1988, sales increases over those of 1987 were principally in products that generate Harmon's higher profit margins; however, these gains were largely offset by a decline in the already thin profit margins of Modern, inclusion of certain product costs of Cedrite and CAMCO, and an $800,000 increase in research and development costs, of which half was related to Cedrite. As a result, the 1988 gross profit margin of 27.6% was only fractionally improved over the 27.3% margin achieved in 1987.

EXPENSES AS A PERCENT OF NET SALES

	Percentage of Net Sales Year Ended December 31,			Percentage of Change 1989 over 1988	1988 over 1987	1987 over 1986
	1989	1988	1987			
Net sales	100.0%	100.0%	100.0%	13.5	13.1	20.8
Cost of sales	75.0	72.4	72.7	17.6	12.6	26.9
Gross profit	25.0	27.6	27.3	2.9	14.4	7.2
Selling, general and administrative and other operating expenses, net	20.8	19.3	19.1	22.2	15.1	16.0
Operating income	4.2	8.3	8.2	(42.2)	12.9	(8.7)
Other expense	1.7	2.4	2.7	(18.4)	(2.2)	55.3
Earnings before income taxes	2.5	5.9	5.5	(52.1)	20.7	(24.6)
Income taxes	.9	2.0	2.5	(49.8)	(10.4)	(30.0)
Net earnings	1.6%	3.9%	3.0%	(53.3)	46.9	(19.4)

Selling, General & Administrative Expenses

Selling, general and administrative expenses increased $2.8 million in 1989 to $15.3 million, comprising 20.8% of sales. This compared to SG&A expenses of 12.5 million in 1988 and $10.9 million in 1987. Nearly half of the 1989 increase relates to costs at PDI; other cost increases were sustained in personnel, travel, commissions naturally incident to higher sales, and real estate taxes. Increases in 1988 included the normal selling costs that accompany higher sales, ongoing start-up costs for Cedrite and CAMCO, costs incurred in moving Modern's manufacturing operation from Louisville, Ky. to Griffin, Ga., a substantial increase in health care costs, and higher expenses to meet increased regulatory requirements. In addition, substantially increased legal costs were incurred by the company in pursuing legal remedies against Modern's previous owner to recover damages incurred as a result of the alleged inadequacies in certain products manufactured and sold by Modern prior to the company's ownership.

Research and Development

Research and Development expenditures of $3.8 million were 5.1% of sales for 1989 compared to $4.1 million for 1988 (6.4% of sales) and $3.3 million for 1987 (5.8% of sales). R&D costs were below those for 1988 principally because Cedrite required greater R&D in 1988 than in 1989; the bulk of R&D for Modern's new cantilever occurred in 1988, and R&D incurred for products under specific contracts appears as a direct labor cost instead of R&D. Approximately half of the 1988 increase over 1987 related to expenditures for Cedrite.

Harmon's R&D expenditures follow a set corporate policy and are not heavily influenced by current sales or business trends. This policy insures a continuity of product improvement. Harmon expenses R&D costs as incurred. This often penalizes current performance, as it did in 1988 and 1987, but new products are never burdened with development cost recoveries.

Miscellaneous Income

In each of the past three years, the company experienced positive income from miscellaneous activities: 1989— the $227,000 was primarily due to dividends from an affiliate company and interest income; 1988—the $217,000 was mainly a gain on the sale of Modern's vacant factory in Louisville, which had no effect on the production of railroad crossing warning systems; 1987—the sale of an airplane owned by Modern and a modest profit from the investment in Phoenix Data, Inc. made up the majority of the $144,000 income.

Interest Expense

Interest expense increased 36.4% in 1989 to $2.5 million because of a $5.1 million increase in borrowings to support the development of and to fund the operating losses of recent acquisitions, principally Cedrite and PDI. Without the benefit of a $3.2 million litigation settlement (described in Note 5 of the Notes to Consolidated Financial Statements appearing on page 40 in this report), borrowings and consequent interest costs would have been even higher in 1989. In 1988 interest expense increased 14.3% to $1.8 million, largely because of higher borrowings to support investments in Cedrite and an increase in borrowing rates.

Additional Pre-Tax Income

In each of the past three years, 20% of the loss incurred by Cedrite was assumed by Cedrite's 20% minority shareholder. This amount appears as a credit to Harmon's Consolidated Statements of Earnings and amounted to $465,000 in 1989, $256,000 in 1988 and $44,000 in 1987. Harmon also benefited in 1989 from two favorable litigation settlements, amounting to $749,000, which are described in Note 5 mentioned above.

Income Taxes

The company's effective income tax rate for 1989 was 35.7% of pretax earnings compared to 34.0% in 1988 and 45.8% in 1987. Although the *amount* of taxes was less in 1989 because of reduced earnings, the tax *rate* was higher because of higher state taxes, reduced R&E credits relative to 1988 and a higher *percentage* of non-tax deductible expenses (goodwill), which had the effect of raising the tax *rate* for 1989. The sharp decline in 1988 from 1987 reflected lower Federal tax rates in effect and an increase in R&E credits in 1987.

FAS No. 96

The Financial Accounting Standards Board adopted a new ruling (FAS 96) in December 1987, the implementation of which is currently scheduled for 1992.

The basic thrust of this rule requires the company to reflect current tax rates by reducing the liability that is currently recorded on the books, but which will not be paid until future years. These liabilities are currently carried on the books of the company at the higher, former tax rates. In addition, this ruling requires the company to write off deferred recoverable income taxes that will not be due in a year in which a deferred tax liability is payable.

Harmon has not yet implemented this standard, and it is presently studying its effects. However, it believes the net effect of writing off the recoverable deferred income taxes and reducing the deferred tax payable will be insignificant. Future effective tax rates may be affected negatively since the company may not be able to record recoverable income taxes on certain deferred expense items.

Inflation

In the aggregate, inflation has been moderate during the past three years, averaging 4% to 5%. Traditionally, such minor cost increases have been offset by increasing the selling prices of Harmon products. Competitive pressures over the past years have made this impossible. Moreover, prices have been reduced on certain items to remain competitive and keep market share. Thus, inflation has become a nagging, eroding force that has been offset in recent years only by gains in productivity, which to date have been successful. Management believes that competitive pricing pressures will remain for the foreseeable future. Its program to combat this is to continue to increase productivity and to develop totally new products in areas where price competition is less fierce (Cedrite crossties, for example) and to acquire products or companies in railroad electronics or allied fields that will expand Harmon's total product offerings.

Earnings Analysis

Earnings contributions from the company's established operating subsidiaries, HEI and EPC, continued at record levels in 1989. Margins held firm largely because of efficiencies made in the manufacturing process and overall cost controls. To a large extent, the outstanding results of these two subsidiaries are obscured in the consolidated figures because of the operating losses sustained by CAMCO, Cedrite, PDI and Modern in 1989. A similar pattern existed in 1988.

Operations Outlook

The prospects for 1990 operations contain some unknowns. In order of magnitude, ongoing issues are (1) the amount of time and additional investment that will be required to improve automated production in the Cedrite crosstie program. When running at capacity, the production of crossties is expected to bring substantial profits; however, until this occurs, heavy losses will continue; (2) a recent, but perhaps traditional, slowdown in first quarter orders; (3) the time it will take to restore profitability to both PDI's and Modern's operations; and (4) the amount of additional investments in time and money that will be required to achieve profitability in our CAMCO subsidiary.

- **Liquidity**

The "Other Data" section of the Selected Financial Data table (page 22 in this report) should be read in conjunction with the following comments.

Traditional measures of liquidity at 1989 year-end deteriorated from positions at 1988 and 1987 year-ends, largely because of monies invested to support the recent Harmon acquisitions. On the whole, however, the ratios continue to indicate an acceptable liquidity position for the company.

Capital Expenditures

Capital expenditures for 1989 were $4.6 million; more than half was allocated for Cedrite. Capital expenditures in 1988 were $9.9 million, including $7.7 million for Cedrite. Capital expenditures in 1987 were $3.6 million ($2.1 million for Cedrite). Capital expenditures for 1990 are estimated at $5.1 million, including approximately $1.0 million for Cedrite. The capital budget for 1990 is a plan, not a commitment, and can be scaled back if necessary.

Cash Needs

Cash needs may become acute in 1990. Large cash outlays are anticipated in the first half of 1990 to pay off certain accrued liabilities, to fund capital expenditures, and to provide operating capital for Cedrite, CAMCO and PDI. Management presently believes its unused lines of credit and subsequent projected cash flows will be sufficient to meet these needs; however, 1990 contains some unknowns, particularly as to the arrival time of positive cash flow for Cedrite (see "Operations Outlook" on page 27). If this is materially delayed, or if the traditional first quarter slump in orders for HEI and EPC products extends into the spring and summer months, the Company may need to develop additional lines of credit.

Inventories

Inventories increased $1.1 million (9%) in 1989 on a sales increase of $8.7 million (13.5%). The increase is attributable to first year inclusion of inventory of PDI and the expanded inventories of CAMCO and Cedrite. The remaining subsidiaries continued to reduce their inventories relative to sales for the fourth consecutive year.

Credit & Collections

Receivables increased $2.7 million (30%) from 1988 year-end to 1989 year-end. A portion of the increase relates to abnormally high shipments in the month of December, and the balance reflects the effect of 1989's increased sales.

Indebtedness

Total indebtedness increased $3.4 million in 1989 (a $2,275,000 *decrease* in current liabilities but a $5,714,000 *increase* in long-term debt) compared to a $1.3 million increase in 1988 ($1,553,000 *increase* in current liabilities and a $221,000 *decrease* in long-term debt). The debt increase in 1989 would have been substantially greater had it not been for the litigation awards of $3.7 million received in 1989 (see note 5 on page 40).

- **SHARE DATA**

Share data presented throughout this report reflects all stock splits and stock dividends since inception. The number of outstanding shares increased by 150,408 from 1988 to 1989. The increase was as follows: 149,630 shares issued to acquire the remaining shares of PDI in January, 1989; 5,500 shares issued in February, 1989 to pay accrued officers' bonuses, less 4,722 shares redeemed in September, 1989 from a previous owner of PDI. Neither the weighted or actual shares outstanding at 1989 year-end reflect 227,027 shares of treasury stock that are reserved for possible debenture conversion, which is explained more fully in note 4 in the accompanying financial statements. Options outstanding at various prices aggregated 334,000 shares at 1989 year-end. No options were exercised either in 1988 or 1989. ■

• Comparative Quarterly Results

(Thousands of dollars, except per share amounts)	March 31	June 30	Sept. 30	Dec. 31
	Quarters Ended			
Nineteen Eighty-Nine				
Net sales	$16,591	$19,616	$18,698	$18,376
Gross profit	4,284	5,365	4,117	4,568
Net earnings (loss)	63	920	(142)	319
Net earnings (loss) per common share	.01	.20	(.03)	.07
Cash dividend per common share	.0625	—	.0625	—
Stock price range:				
High	7 5/8	8	8 3/4	8
Low	5 3/4	6	7 3/4	6 3/8

(Thousands of dollars, except per share amounts)				
Nineteen Eighty-Eight				
Net sales	$ 14,347	$ 16,350	$ 18,245	$ 15,616
Gross profit	3,891	4,803	5,355	3,775
Net earnings	417	785	952	332
Net earnings per common share	.09	.18	.21	.07
Cash dividend per common share	.0625	—	.0625	—
Stock price range:				
High	6 1/8	7 1/4	8 1/8	7 7/8
Low	5 1/4	5 7/8	6 5/8	7 1/8

• Fourth Quarter Results (Unaudited)

Sales for the 1989 fourth quarter increased 17.7 percent to $18.4 million from $15.6 million for the same quarter in 1988. Net earnings declined fractionally to $319,000 from $332,000 posted for the fourth quarter of 1988. The sales increase included low margin sales of CAMCO and PDI and negative margin sales of Cedrite, which accounts for the lack of profit increase on a near $3 million gain in sales. Net earnings were aided considerably in the 1989 fourth quarter from receipt of a $500,000 jury award following a successful suit against a former shareholder of Modern.

Margins remained under pressure through the 1989 final quarter because of high cost of sales of Cedrite, Modern, CAMCO and PDI. Earnings were also negatively impacted by greater interest expenses (relative to 1988) occasioned by increased borrowings to support Cedrite (especially) as well as additional funding for PDI and CAMCO. ■

Consolidated Balance Sheets
(Thousands of dollars)

Assets at December 31,	1989	1988
Current assets:		
Cash and cash equivalents	$ 362	$ 534
Trade receivables, less allowance for doubtful accounts of $245,000 in 1989 and $239,000 in 1988 (Notes 3 and 4)	11,730	9,008
Note receivable from affiliate (note 2)	—	100
Costs and estimated earnings in excess of billings on uncompleted contracts (notes 3 and 4)	942	341
Inventories (note 4):		
Work in process	4,605	3,911
Raw materials and supplies	9,307	8,869
	13,912	12,780
Federal and state income taxes receivable	555	(388)
Prepaid expenses and other current assets	371	365
Total current assets	27,872	22,740
Property, plant and equipment, at cost (note 4):		
Land	697	650
Buildings	6,690	6,275
Machinery and equipment	14,986	14,184
Office furniture and equipment	6,555	5,663
Transportation equipment	1,109	1,027
Leasehold improvements	1,203	953
	31,240	28,752
Less accumulated depreciation and amortization	12,808	10,537
Net property, plant and equipment	18,432	18,215
Cost in excess of fair value of net assets of subsidiaries acquired, net of amortization of $941,000 in 1989 and $742,000 in 1988	1,039	1,459
Patents, net of amortization of $1,670,000 in 1989 and $1,263,000 in 1988 (notes 2 and 4)	1,173	1,580
Other assets	1,839	1,723
	$50,355	$ 45,717

See accompanying notes to consolidated financial statements.

Liabilities and Stockholders' Equity	at December 31, 1989	1988
Current liabilities:		
Notes payable (note 4)	$ 1,262	$ 1,772
Current installments of long-term debt (note 4)	2,179	2,111
Accounts payable	5,177	6,201
Accrued payroll, bonus and employee benefit plan contributions	3,497	2,927
Billings in excess of costs and estimated earnings on uncompleted contracts (note 3)	679	1,241
Other accrued liabilities	634	1,451
Total current liabilities	13,428	15,703
Deferred income taxes	600	386
Deferred liability (note 8)	1,644	1,193
Long-term debt and capitalized lease obligations (note 4)	19,914	14,400
Minority interest	13	478
Stockholders' equity (notes 4 and 9):		
Common stock of $.25 par-value; authorized 10,000,000 shares, issued 5,340,135 in 1989 and 5,185,005 shares in 1988	1,335	1,296
Additional paid-in capital	11,683	11,073
Retained earnings	8,763	8,181
	21,781	20,550
Less treasury stock at cost, 711,980 shares in 1989 and 707,258 shares in 1988	7,025	6,993
Total stockholders' equity	14,756	13,557
Commitments (note 8)		
	$ 50,355	$ 45,717

Consolidated Statements of Earnings
(Thousands of dollars, except per share amounts)

Years ended December 31,	1989	1988	1987
Net sales	$ 73,281	$64,558	$57,068
Cost of sales	54,947	46,734	41,492
Gross profit	18,334	17,824	15,576
Selling, general and administrative expenses	15,270	12,493	10,856
Amortization of cost in excess of fair value of net assets of subsidiaries acquired	199	203	182
Miscellaneous income — net	227	217	144
Operating income	3,092	5,345	4,682
Interest expense	2,503	1,835	1,606
Gain on litigation settlements (note 5)	749	—	—
Minority interest in loss of consolidated subsidiary	465	256	44
Earnings before income taxes	1,803	3,766	3,120
Income tax expense (benefit) (note 6):			
Current	454	1,588	1,638
Deferred	189	(308)	(210)
	643	1,280	1,428
Net earnings	$ 1,160	$ 2,486	$ 1,692
Net earnings per common share	$ .25	$ .55	$ .38

See accompanying notes to consolidated financial statements.

Consolidated Statements of Stockholders' Equity
(Thousands of dollars, except per share amounts)

	Common Stock	Additional Paid-in Capital	Retained Earnings	Treasury Stock	Total Stockholders' Equity
Balance at December 31, 1986	$ 1,295	$11,047	$ 5,121	$(6,993)	$ 10,470
Net earnings	—	—	1,692	—	1,692
Dividends declared ($.125 per share)	—	—	(558)	—	(558)
Balance at December 31, 1987	1,295	11,047	6,255	(6,993)	11,604
Net earnings	—	—	2,486	—	2,486
Common stock issued (note 9)	1	26	—	—	27
Dividends declared ($.125 per share)	—	—	(560)	—	(560)
Balance at December 31, 1988	1,296	11,073	8,181	(6,993)	13,557
Net earnings	—	—	1,160	—	1,160
Common stock issued (note 9)	1	31	—	—	32
Common stock issued in acquisition of subsidiary (note 2)	38	579	—	—	617
Redemption of common stock (note 9)	—	—	—	(32)	(32)
Dividends declared ($.125 per share)	—	—	578	—	578
Balance at December 31, 1989	$ 1,335	$11,683	$ 8,763	$(7,025)	$ 14,756

See accompanying notes to consolidated financial statements.

Consolidated Statements of Cash Flows

(Thousands of dollars)

Years ended December 31,	1989	1988	1987
Cash flows from operating activities:			
Net income	$ 1,160	$ 2,486	$ 1,692
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	3,185	2,834	2,531
Proceeds from litigation settlements (note 5)	3,700	—	—
Gain on litigation settlements (note 5)	(749)	—	—
(Gain) loss on sale of property, plant & equipment	(15)	(225)	24
Deferred tax expense (benefit)	189	(308)	(210)
Minority interest in loss of consolidated subsidiary	(465)	(256)	(44)
Changes in assets and liabilities, net of effects of purchase of Phoenix Data, Inc.			
Trade receivables	(2,073)	1,630	(2,943)
Inventories	402	(1,576)	300
Estimated costs, earnings and billings on contracts	(1,163)	631	309
Note receivable from affiliate	—	(100)	—
Prepaid expenses	5	(140)	(9)
Accounts payable	(1,266)	1,833	1,450
Accrued payroll and benefits	570	1,165	403
Current income taxes payable	(943)	(149)	54
Other liabilities	(1,133)	159	(217)
Other deferred liabilities	451	375	338
Total adjustments	695	5,873	1,986
Net cash provided by operating activities	1,855	8,359	3,678
Cash flows from investing activities:			
Capital expenditures	(4,589)	(9,886)	(3,552)
Acquisition of patents	—	—	(1,158)
Proceeds from sale of property, plant and equipment	359	979	25
Cash acquired in purchase of Phoenix Data, Inc.	12	—	—
Cost in excess of fair value of subsidiary acquired	(127)	—	—
Other investment activities	(298)	(51)	355
Net cash used in investing activities	(4,643)	(8,958)	(4,330)
Cash flows from financing activities:			
Proceeds from issuance of long-term debt	12,589	9,927	6,966
Net borrowings under line of credit agreements	(1,415)	1,217	110
Principal payments of long-term debt	(7,980)	(9,812)	(5,987)
Payment of dividends	(578)	(560)	(558)
Net cash provided by financing activities	2,616	772	531
Net increase (decrease) in cash and cash equivalents	(172)	173	(121)
Cash and cash equivalents at beginning of year	534	361	482
Cash and cash equivalents at end of year	$ 362	$ 534	$ 361
Supplemental disclosures of cash flow information:			
Cash paid during the year for:			
Interest	$ 2,547	$ 1,796	$ 1,557
Income taxes	$ 1,372	$ 1,729	$ 1,460

See accompanying notes to consolidated financial statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation

The consolidated financial statements of the Company include the accounts of Harmon Industries, Inc. and its wholly-owned subsidiaries, Harmon Electronics, Inc., Modern Industries, Inc. (Modern), Electro Pneumatic Corporation (EPC), Consolidated Asset Management Company, Inc. (CAMCO), Phoenix Data, Inc. (PDI) and an 80% owned subsidiary, Cedrite Technologies, Inc. (Cedrite).

Significant intercompany accounts and transactions have been eliminated in consolidation.

Nature of Business

Harmon is a major supplier of communication and control products to railroads throughout North America. It manufactures an extensive line of railroad signal and communication equipment, traffic control systems, rail/highway grade crossing hardware, allied components, and reconstituted railroad ties under a unique process that uses old, discarded ties as a base material.

Harmon also provides a single-source, rapid delivery service for urgently needed railroad components by warehousing commonly-used parts and equipment, which are manufactured both by Harmon and its competitors. Harmon also makes sophisticated data acquisition and analysis systems for industrial, scientific and military uses.

Inventory Valuation

Inventories are valued primarily at the lower of cost (first-in, first-out) or market (net realizable value). The components of cost are labor, materials and an allocation of manufacturing overhead.

Property, Plant and Equipment

Buildings, machinery and equipment, office furniture and equipment, transportation equipment, assets capitalized under capital lease agreements and leasehold improvements are being depreciated or amortized using the straight-line method over the estimated useful lives of the assets, which range from two to thirty-three years. Maintenance and repairs are charged to operations as incurred. Renewals and betterments are capitalized as additions to the appropriate asset accounts. Upon sale or retirement of assets, the cost and related accumulated depreciation applicable to such assets are removed from the accounts, and any resulting gain or loss is reflected in operations.

Income Taxes

Deferred income taxes are the result of timing differences in recognizing some items of expense for financial reporting purposes in periods which differ from the recognition for income tax purposes.

Long-term Contracts

Profits on long-term contracts are recorded on the basis of the Company's estimates of the percentage of completion of individual contracts. That portion of the total contract price is accrued which is allocable, on the basis of the Company's engineering estimates of the percentage of completion, to contract expenditures incurred. Profits are not

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES, CONTINUED

recorded during the start-up phase of the contract, which has been determined by the Company to approximate the initial 15% of design and construction. All losses are recognized in the period during which they become evident.

Cost in Excess of Fair Value of Net Assets Acquired

Cost in excess of the fair value of net assets acquired is amortized on a straight-line basis over five to ten years.

Interest Capitalization

The Company capitalizes interest costs on funds borrowed to finance the construction of major facilities. Interest expense of $202,000 was capitalized during the year ended December 31, 1988.

Stock Option Plans

No charges are made to earnings in accounting for options granted because all options are granted at the fair market value at the date of grant.

Patents

The cost of patents acquired is being amortized on a straight-line basis over the estimated remaining economic lives of the respective patents, which is less than the statutory life of each patent.

Statement of Cash Flows

For purposes of the statement of cash flows, the Company considers all highly liquid debt instruments purchased with a maturity of three months or less to be cash equivalents.

Research and Development

Costs incurred in the creation and start-up of new products or in changing existing products are charged to expense as incurred. Such costs amounted to approximately $3,758,000, $4,134,000 and $3,318,000 for the years ended December 31, 1989, 1988 and 1987, respectively.

Earnings per Common Share

Earnings per common share are based on the weighted average number of common shares outstanding. Effect has been given to common stock equivalents.

2. ACQUISITIONS

On January 1, 1989 the Company completed the acquisition of Phoenix Data, Inc., a manufacturer of analog-to-digital conversion devices for the aerospace and defense industries. The total cost of the acquisition was $1,298,250. Thirty-one percent of the outstanding PDI shares were purchased prior to January 1, 1989, while the remaining shares were obtained in exchange for 149,630 shares of previously unissued shares of the Company, with a fair market value of $617,000. The fair market value was determined by independent valuation. The transaction has been accounted for using the purchase method of accounting. The excess of cost over the fair market value of net assets acquired ($127,000) is being amortized on a straight-line basis over five years.

PDI's results of operations subsequent to January 1, 1989 are included in the Company's consolidated financial statements. Pro forma consolidated results of operations are not presented because the amounts do not significantly differ from historical Company results.

On July 9, 1987, the Company acquired for $150,000 in cash, and a commitment to fund $3,350,000 in working capital requirements, 80% of the issued and outstanding common stock of SNP, Inc., subsequently reorganized as Cedrite Technologies (Cedrite). Cedrite is a development stage enterprise formed to manufacture and market composite railroad ties developed with certain patented technologies owned by Cedrite. Cedrite had no significant operations prior to acquisition.

3. Contracts in Progress

Contract costs on uncompleted contracts are as follows:

(Thousands of dollars)	*Costs and estimated earnings in excess of billings*	*Billings in excess of costs and estimated earnings*	*Total*
December 31, 1989:			
Costs and estimated earnings	$ 6,625	$ 9,842	$ 16,467
Billings	5,683	10,521	16,204
	$ 942	$ (679)	$ 263
December 31, 1988:			
Costs and estimated earnings	$ 2,442	$ 8,080	$ 10,502
Billings	2,081	9,321	11,402
	$ 341	$ (1,241)	$ (900)

All receivables on contracts in progress are considered to be collectible within twelve months.

4. Indebtedness

(Thousands of dollars) December 31,	1989	1988
Short term debt:		
Notes payable to bank under lines of credit	$ 1,141	$ 1,772
Note payable to minority shareholder	121	—
	$ 1,262	$ 1,772

The Company and its subsidiaries have bank lines of credit aggregating $4,000,000 at December 31, 1989, which were available to support interim financing needs. The total outstanding under all credit facilities at December 31, 1989 was $1,141,000. The borrowings accrue interest at rates ranging from 12.0% to 12.5% at December 31, 1989 and are secured by receivables, inventories and equipment.

The note payable to minority interest holder represents an amount borrowed by Cedrite under a working capital note repayable on demand. The note bears interest at prime plus 4% (14.5% at December 31,1989) and is subordinated to all other debt of Cedrite.

4. INDEBTEDNESS, CONTINUED

(Thousands of dollars) December 31,	1989	1988
Long term debt and capitalized lease obligations:		
Note payable to bank under working capital loan	$ 5,600	$ 700
Note payable to bank under fixed asset loan	—	509
Note payable to bank under Cedrite working capital loan	3,325	3,500
Note payable to bank under Cedrite equipment loan	4,320	4,905
Note payable under fixed asset loan	1,500	—
9% Subordinated convertible debentures	2,100	2,100
Industrial revenue bonds	989	1,275
Capitalized lease obligations	2,536	2,736
Secured notes payable	1,720	764
Unsecured note payable	3	22
Total long-term debt and capitalized lease obligations	22,093	16,511
Less current installments of long-term debt and capitalized lease obligations	2,179	2,111
Long-term debt and capitalized lease obligations, excluding current installments	$ 19,914	$ 14,400

Note payable to bank under working capital loan

The working capital loan is a 30-day demand note, which comes due on January 2, 1992, unless prior demand is made, and bears interest at a base rate established by the bank plus 1% (11.5% at December 31, 1989). The bank has waived the right to demand payment until January 2, 1992, unless an event of default occurs and, accordingly, the working capital loan has been classified as long term debt.

The Company had unused working capital loan availability under this agreement of $7,300,000 at December 31, 1989. The agreement is collateralized by liens against the Company's inventories, receivables, contract rights, and other tangible and intangible properties, both real and personal.

Note payable to bank under fixed asset loan

The note payable to bank under fixed asset loan was repaid during 1989. The Company has additional loan availability of $2,700,000 under this credit arrangement as of December 31, 1989.

Note payable to bank under Cedrite working capital loan

As part of the acquisition of Cedrite Technologies (see note 2), Harmon Industries, Inc. obtained a $3,500,000 working capital loan to fund development stage activities. The Company began making monthly installments beginning August 2, 1989. Interest accrues at a base rate established by the bank plus 1% (11.5% at December 31, 1989). The loan is collateralized by all tangible and intangible assets of the Company.

Note payable to bank under Cedrite equipment loan

In addition, Cedrite obtained an equipment loan which bears interest at a base rate established by the bank plus 1% (11.5% at December 31, 1989). Principal is due in monthly installments. The loan is secured by all equipment of Cedrite.

Note payable under fixed asset loan

The fixed asset loan bears interest at a rate of 10.25% with monthly principal and interest payments through January 14, 1997. The loan is secured by fixed assets with a depreciated value of $262,000.

9% Subordinated convertible debentures

On December 31, 1986, the Company issued 9% subordinated convertible debentures (without sinking fund) in the amount of $2,100,000, due December 31, 1996. Interest payments are payable at the end of each calendar quarter. The debentures can be converted into the Company's common stock at a price of $9.25 per share, subject to adjustments, if any, for stock dividends or split-ups. The debentures became callable by the Company at 108% of par value at December 31, 1988, decreasing one per cent per annum through December 31, 1996, provided that prior to January 1, 1990 the debentures were not callable, unless the bid price of the Company's common stock for any 20 trading days within a consecutive period of 30 trading days ending not more than five trading days prior to the date of notice of redemption is at least 150% of the conversion price, as adjusted.

The debenture agreement includes a covenant that prevents the Company from paying cash dividends on its common stock for the period commencing at the end of the third consecutive quarter in which the Company has experienced net losses and continuing until the Company has achieved three consecutive quarters of net earnings or until subsequent cumulative net earnings have exceeded the cumulative quarterly losses, whichever period is shorter.

Industrial revenue bonds

Two series of industrial revenue bonds were issued to provide funds to construct and equip manufacturing and research and development facilities. One series of bonds, bearing interest at 89.7% of the prevailing prime commercial rate but not less than 7.5% (9.4% at December 31, 1989 and 7.7% at December 31, 1988), matures in annual installments of $140,000 plus interest through 1995. The second series of bonds, which provides for the lease of the facilities to the Company by the issuers, bears interest at 10% and matures in annual installments of $150,000 plus interest, through 1990. The lease contains a bargain purchase option which management intends to exercise and, accordingly, the lease has been accounted for as a purchase. The bonds are secured by buildings and equipment with a depreciated cost of $3,210,000, and land with a cost of $164,000 at December 31, 1989.

Capitalized lease obligations

The capitalized lease obligations have implicit interest rates ranging from approximately 8.9% to 16.7%, and are due in monthly installments, including interest through 2007. They are secured by related assets with a depreciated cost of $235,000 at December 31, 1989.

Secured notes payable

The Company's secured notes payable bear interest ranging from 9.15% to 13% and are due in monthly principal and interest installments through 1991 and in a lump sum payment of $482,000 in 1992. The notes are secured by various equipment with a depreciated cost of $1,049,000 at December 31, 1989 and by inventory.

Unsecured note payable

The Company's unsecured note payable bears interest at 8% and is due in monthly installments of $1,066, including interest, through March 1990.

Covenants

The various indebtedness agreements contain, among other things, covenants relating to: restrictions on expenditures or commitments for fixed assets in excess of the greater of $2,500,000 per year, exclusive of expenditures related to Cedrite, or 65% of net earnings

4. INDEBTEDNESS, CONTINUED

less dividends paid plus depreciation; maintenance of a positive net worth; maintenance of a minimum working capital of $3,000,000; a maximum ratio of debt to equity of 4 to 1 through 1990; and, a limitation on the payment of dividends to 50 percent of net earnings. The Company was in compliance with all such covenants at December 31, 1989.

Maturities

At December 31, 1989, long-term debt maturities and future minimum principal payments under capitalized lease obligations for 1990 through 1994 are:

Year Ended December 31	(Thousands of dollars)
1990	$2,179
1991	2,075
1992	8,666
1993	1,757
1994	813

5. SETTLEMENT OF LITIGATION

During May 1989 the Company reached an agreement with its largest equipment contractor for Cedrite. Under the terms of the agreement the Company received $3,200,000 in cash and the rights to certain equipment and the contractor was released from further obligations under the contract. The Company reduced the basis of previously purchased Cedrite equipment by $2,738,000 and the remaining $462,000 was credited to income.

In November 1989 the Company was awarded $500,000 by a jury in the United States District Court for the Western District of Missouri in a lawsuit against the former owner of Modern. The Company used $213,000 of the proceeds to recover legal and repair expenses incurred during 1989 and recognized a gain of $287,000, which represented a recovery of a portion of prior year's expenses.

6. INCOME TAXES

Income tax expense (benefit) consisted of the following components for the years ended December 31, 1989, 1988 and 1987:

	(Thousands of dollars)		
Years ended December 31,	1989	1988	1987
Current:			
Federal	$ 302	$ 1,413	$ 1,540
State	152	175	98
Total current	454	1,588	1,638
Deferred:			
Federal	175	(281)	(187)
State	14	(27)	(23)
Total deferred	189	(308)	(210)
Total income tax expense	$ 643	$ 1,280	$ 1,428

Income tax expense for the years ended December 31, 1989, 1988 and 1987 resulted in effective tax rates of 35.7%, 34.0%, and 45.8%, respectively. Effective rates differ from the statutory Federal income tax rates of 34% in 1989 and 1988 and 40% in 1987 because of the following:

Years ended December 31,	(Thousands of dollars) 1989		1988		1987	
	Amount	Percent	Amount	Percent	Amount	Percent
"Expected" tax expense at statutory rate	$ 613	34.0%	$1,280	34.0%	$1,248	40.0%
State taxes, net of Federal income tax benefit	110	6.1	98	2.6	45	1.5
Amortization of cost in excess of acquired net assets	68	3.7	69	1.8	73	2.3
Minority interest in loss of consolidated subsidiary	(153)	(8.4)	(87)	(2.3)	(18)	(.6)
Research and experimentation credits	(6)	(0.3)	(182)	(4.8)	(119)	(3.8)
Other	11	.6	102	2.7	199	6.4
	$ 643	35.7%	$1,280	34.0%	$1,428	45.8%

Deferred income tax expense (benefit) for the years ended December 31, 1989, 1988 and 1987 consisted of the following:

Years ended December 31,	(Thousands of dollars) 1989	1988	1987
Deferred taxes on timing differences:			
Depreciation	$ 395	$ 42	$ 99
Deferred compensation	(156)	(130)	(135)
Capitalized interest	—	73	—
Other	(51)	(293)	(174)
	$ 189	$ (308)	$ (210)

7. Business Segment Information

The Company and its subsidiaries operate in two reportable segments, as defined under Statement of Financial Accounting Standards No. 14, "Financial Accounting for Segments of a Business Enterprise." These segments consist of Railroad electronics and related products and Other products. Intersegment sales were insignificant. Corporate assets represent cash, corporate equipment and other miscellaneous assets which are not related to a specific business segment. Business segment information for the years ended December 31, 1989 and 1988 is as follows (no information is presented for the year ended December 31, 1987 as all operations and identifiable assets were in the Railroad electronics and related products segment):

7. BUSINESS SEGMENT INFORMATION, CONTINUED

Years ended December 31,	1989			1988		
	Railroad electronics and related products	Other products	Total	Railroad electronics and related products	Other products	Total
Net sales	$68,063	$ 5,218	$73,281	$64,527	$ 31	$64,558
Operating income (loss)	$11,378	$(4,161)	$ 7,216	$10,601	$(1,843)	$ 8,758
General corporate expense			(2,910)			(3,157)
Interest expense			(2,503)			(1,835)
Earnings before income taxes			$ 1,803			$ 3,766
Identifiable assets	$32,025	$15,553	$47,578	$32,088	$11,758	$43,846
Corporate assets			2,777			1,871
Total assets			$50,355			$45,717

Depreciation and amortization expense for the Railroad electronics and related products segment and the Other products segment were $2,053,000 and $768,000, respectively, for the year ended December 31, 1989. Capital expenditures for the Railroad electronics and related products segment and the Other products segment were $1,730,000 and $2,524,000, respectively, for the year ended December 31, 1989.

Two customers accounted for net sales of approximately $9,619,000 and $8,302,000 for the year ended December 31, 1989. Two customers accounted for approximately $8,336,000 and $6,819,000 of net sales for the year ended December 31, 1988. Four customers accounted for approximately $8,557,000, $7,602,000, $6,340,000 and $5,864,000 of net sales for the year ended December 31, 1987.

8. COMMITMENTS AND DEFERRED LIABILITY

Leases

The Company has entered into various lease arrangements covering the use of certain manufacturing facilities, administrative offices and equipment, all of which are treated as operating leases. Rental expense related to these leases amounted to $1,238,000, $1,057,000 and $897,000 for the years ended December 31, 1989, 1988 and 1987, respectively. Included in rental expense is expense relating to the lease of administrative office space from a director of the Company at a monthly rental ranging from $900 to $2,000 during the period 1987 through 1989. This lease expires on October 31, 1993.

A summary of noncancellable long-term operating lease commitments follows:

Years ended December 31,	Asset leased		Total Commitments
	Equipment	Real property	
	(Thousands of dollars)		
1990	$ 199	$ 790	$ 989
1991	111	790	901
1992	85	726	811
1993	70	663	733
1994	51	491	542
1995-2002	-0-	965	965

It is expected that in the normal course of business, leases that expire will be renewed or replaced by leases on other properties; thus, it is anticipated that future minimum lease commitments will not be less than the amounts shown for 1990.

Employee Benefits

On June 17, 1985, the Company formed an employee stock ownership plan and trust (ESOP), which includes all employees except employees of PDI and Cedrite. Company contributions to the ESOP are based on a percentage of pretax earnings.

ESOP contributions charged to operating expense were $1,315,000, $1,175,000, and $597,000 for the years ended December 31, 1989, 1988 and 1987, respectively.

The Company and its subsidiaries have various executive bonus plans with bonuses based on a percentage of pretax earnings after ESOP contributions. Accruals made under these plans were $301,000, $301,000, and $204,000 for the years ended December 31, 1989, 1988 and 1987, respectively.

The Company has a nonqualified, unfunded deferred compensation plan and trust for certain key executives providing for payments upon retirement, death or disability. Under the plan, certain employees receive retirement payments equal to a portion of the three highest continuous years' average compensation. These payments are to be made for the remainder of the employees' life with a minimum payment of ten years' benefits to either the employee or his beneficiary. The plan also provides for reduced benefits upon early retirement, disability, or termination of employment. The deferred compensation expense was $451,000, $375,000, and $338,000 for the years ended December 1989, 1988 and 1987, respectively.

9. Equity Transactions

On September 15, 1989, the Company redeemed 4,722 shares of common stock in settlement of a note receivable from a previous owner of Phoenix Data, Inc. The stock was exchanged at its fair market value of $6.70 per share.

In February of 1989, the Company issued 5,500 shares of common stock in payment of officers' bonuses accrued in 1988. The shares were issued at $5.72 per share. In February of 1988, the Company issued 6,160 shares of common stock in payment of Officers' Bonuses accrued in 1987. The shares were issued at $4.54 per share.

On June 1, 1988 the Company granted a stock option for up to 1,000 common shares to each of the Company's ten directors at that date. The option exercise price is $6.84 per share and they expire May 31, 1990. Options for an additional 1000 shares for each director were granted on June 1, 1989 with an exercise price of $7.47 per share which expire May 31, 1991. Although these options may be exercised at any time, no options had been exercised as of December 31, 1989.

On September 1, 1988 the Company granted options totaling 250,000 shares to various officers of the Company and its subsidiaries. The option exercise price is $7.05 per share and they expire September 1, 1995. Options for an additional 64,000 shares were granted on September 1, 1989 with an exercise price of $8.60 per share which expires August 31, 1996. Although these options may be exercised at any time, no options had been exercised as of December 31, 1989.

Report of Independent Auditors

The Board of Directors and Stockholders
Harmon Industries, Inc. and Subsidiaries:

We have audited the accompanying consolidated balance sheets of Harmon Industries, Inc. and Subsidiaries as of December 31, 1989 and 1988, and the related consolidated statements of earnings, stockholders' equity, and cash flows for each of the years in the three year period ended December 31, 1989. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Harmon Industries, Inc. and Subsidiaries at December 31, 1989 and 1988, and the results of their operations and their cash flows for each of the years in the three year period ended December 31, 1989 in conformity with generally accepted accounting principles.

KPMG PEAT MARWICK

Kansas City, Missouri
January 30, 1990

Report of Management

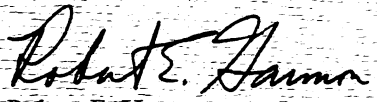
To the Stockholders of Harmon Industries, Inc.:

The management of Harmon Industries, Inc. is responsible for the preparation, presentation and integrity of the consolidated financial statements and other information included in this annual report. The financial statements have been prepared by the Company in accordance with generally accepted accounting principles and, as such, include amounts based on management's best estimates and judgments.

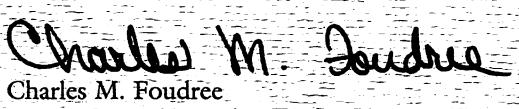
The financial statements have been audited by KPMG Peat Marwick, independent public accountants, and their report appears opposite. Their audits were made in accordance with generally accepted auditing standards and included such reviews and tests of the Company's internal accounting controls as they considered necessary.

The Company maintains a system of internal accounting controls designed to provide reasonable assurance at reasonable cost that Company assets are protected against loss or unauthorized use and that transactions and events are properly recorded.

The Board of Directors, through its Audit Committee, comprised solely of directors who are not employees of the Company, meets with management, the internal auditors and the independent public accountants to assure that each is properly discharging its respective responsibilities. Both the independent accountants and the internal auditors have free access to the Audit Committee, without management present, to discuss the results of their work and their assessment of the adequacy of internal accounting controls and the quality of financial reporting.



Robert E. Harmon
Chairman of the Board



Charles M. Foudree
Executive Vice President – Finance,
Treasurer and Secretary

February 20, 1990

Form 10-K
Shareholders may receive a copy of the Corporation's 1989 Annual Report to the Securities and Exchange Commission on Form 10-K free of charge by writing: Mr. Vincent D. Burget, Vice President, Corporate Affairs, at the Corporation's headquarters listed opposite.

Annual Meeting
Shareholders are cordially invited to attend the 1990 Annual Meeting of Shareholders which will be held at 2:00 p.m. on Tuesday, May 8, 1990, at the Country Club of Blue Springs, Blue Springs, Missouri.

Management urges all shareholders to vote their proxies and thus participate in the decisions that will be made at this meeting.

Registrar & Transfer Agent
United Missouri Bank of Kansas City, N.A.
P.O. Box 410064
Kansas City, MO 64141-0064
☎ 816/556-7445

For change of name, address, or to replace lost stock certificates, write or call the Securities Transfer Division.

Corporate Headquarters
1300 Jefferson Court
Blue Springs, Missouri 64015
☎ 816/229-3345
Telefax: 816/229-0556

Security Analyst Contact
Security analyst inquiries are welcome. Please direct them to:
Vincent D. Burget
Vice President–Corporate Affairs
☎ 816/229-3345

Stock Trading
The Company's common stock is traded in the over-the-counter market, and it is quoted on the NASDAQ National Market System under the symbol HRMN. Stock price quotations can be found in major daily newspapers and in the *The Wall Street Journal.*

At February 1, 1990, the following securities firms were making a dual auction market in the Company's common stock:

Dain, Bosworth Inc.
Dean Witter Reynolds Inc.
George K. Baum & Company
Herzog, Heine, Geduld Inc.
Merrill Lynch Pierce Fenner & Smith Inc.
Paine Webber, Inc.
Piper Jaffray & Hopwood Inc.
Prudential Bache Inc.
Sherwood Securities

Common Stock Price Range and Dividend Information
At December 31, 1989, there were 4,628,155 shares outstanding and approximately 810 shareholders of record. Cash dividends are paid semi-annually in April and October. The dividends paid per share and the range of high and low bid prices for the past eight quarters ended December 31, 1989 are shown below. Per share prices and dividends have been adjusted for all stock splits and stock dividends, if any.

	1989		1988	
Calendar Quarter Ended	Price Range	Dividends	Price Range	Dividends
March 31	$7 5/8 – $5 3/4	$.06 1/4	$6 1/8 – $7 1/2	$.06 1/4
June 30	8 – 6		7 1/4 – 5 7/8	
September 30	8 3/4 – 7 3/4	.06 1/4	8 3/8 – 6 5/8	.06 1/4
December 31	8 – 6 3/8		7 7/8 – 7 1/8	
		$.12 1/2		$.12 1/2

Officers and Directors

Board of Directors

Robert E. Harmon
Chairman of the Board
Harmon Industries, Inc.
Blue Springs, Missouri

Densil Allen, retired
Former Vice President
Unitog Company
Industrial Uniform Manufacturer
Warrensburg, Missouri

Thomas F. Eagleton, Attorney-at-Law
Thompson & Mitchell
St. Louis, Missouri

Charles M. Foudree
Executive Vice President–Finance,
Treasurer, Secretary
Harmon Industries, Inc.
Blue Springs, Missouri

Robert C. Harmon, retired
Founder of Harmon Industries, Inc.
Phoenix, Arizona

Herbert M. Kohn, Attorney-at-Law
Linde Thomson Langworthy Kohn
and Van Dyke, P.C.
Kansas City, Missouri

Gerald E. Myers
Management Consultant
Tempe, Arizona

Björn Olsson, Vice President
Investment AB Cardo
Malmö, Sweden

Donald V. Rentz, President
Morton Cabinet Company, Inc.
Joplin, Missouri

* Richard E. Risely, President
Electro Pneumatic Corp.
Riverside, California

L. Ralph Thomas, retired
Former General Superintendent
Communications & Signal Division
Atchison, Topeka & Santa Fe Railway
Company
Wilmette, Illinois

* Denotes Advisory Director

Corporate Officers

Robert E. Harmon
Chairman, President and Chief
Executive Officer

Charles M. Foudree
Executive Vice President–Finance,
Treasurer and Secretary

Ronald G. Breshears
Vice President–Human Resources

Vincent D. Burget
Vice President–Corporate Affairs

Robert G. Clawson
Vice President–Sales and Marketing

Robert E. Heggestad
Vice President–Technology

Stephen L. Schmitz
Vice President–Controller

Subsidiary Presidents

Consolidated Asset Management
Company, Inc.
James R. Meyer, President

Cedrite Technologies, Inc.
James D. Schembs, President

Electro Pneumatic Corporation
Richard E. Risely, President

Harmon Electronics, Inc.
James P. Lemieux, President

Modern Industries, Inc.
Tim J. Weeks, President

Phoenix Data, Inc.
Lloyd T. Kaiser, President

Corporate Data

Operating Facilities

Cedrite Technologies, Inc.
Kansas City, Kansas

Consolidated Asset Management Company, Inc.
Waycross, Georgia

Electro Pneumatic Corporation
Riverside, California

Harmon Electronics, Inc.
Grain Valley, Missouri (3)
Warrensburg, Missouri (2)

Modern Industries, Inc.
Louisville, Kentucky
Jacksonville, Florida
Griffin, Georgia

Phoenix Data, Inc.
Phoenix, Arizona
Englewood, Colorado

Associates

Henkes-Harmon Industries, Pty. Ltd.
Mooroolbark, Victoria, Australia

Vale-Harmon Enterprises, Ltd.
Dorval, Quebec, Canada
Scarborough, Ontario, Canada

Corporate Headquarters

1300 Jefferson Court
Blue Springs, Missouri 64015
☎816/229–3345
Telefax: 816/229–0556

General Counsel

Linde Thomson Langworthy Kohn and Van Dyke, P.C.
2700 City Center Square
Kansas City, Missouri 64196

Independent Auditors

KPMG Peat Marwick
1600 Commerce Bank Building
Kansas City, Missouri 64106

HARMON INDUSTRIES, INC.
1300 Jefferson Court
Blue Springs, Missouri 64015

816/229–3345

HARMON INDUSTRIES, INC.

1300 Jefferson Court
Blue Springs, Missouri 64015

NOTICE OF ANNUAL MEETING OF SHAREHOLDERS

TO BE HELD AT 2:00 P.M. ON MAY 8, 1990

AT THE COUNTRY CLUB OF BLUE SPRINGS
1600 N. Circle Drive
Blue Springs, Missouri

To the Holders of Common Stock of Harmon Industries, Inc.:

Notice is hereby given that the Annual Meeting of the Shareholders of Harmon Industries, Inc. will be held for the following purposes:

1. To elect ten (10) members of the Board of Directors.

2. To approve the selection of KPMG Peat Marwick as Auditors for the forthcoming fiscal year.

3. To transact such other business as may properly come before the meeting or any adjournments thereof.

Only shareholders of record at the close of business on March 20, 1990, will be entitled to notice of and to vote at the meeting and any adjournments thereof. The transfer books of the Company will not be closed.

Shareholders who do not expect to attend the meeting in person are asked to date, sign and return the proxy using the enclosed envelope which needs no postage if mailed in the United States.

BY ORDER OF THE BOARD OF DIRECTORS

Robert E. Harmon
Chairman and President

1300 Jefferson Court
Blue Springs, Missouri 64015
March 26, 1990

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HARMON INDUSTRIES, INC.

1300 Jefferson Court
Blue Springs, Missouri 64015

PROXY STATEMENT

FOR THE ANNUAL MEETING OF SHAREHOLDERS TO BE HELD MAY 8, 1990

SOLICITATION OF PROXIES

This Proxy Statement and the accompanying form of proxy are being mailed to shareholders of Harmon Industries, Inc. (the "Company") commencing on March 26, 1990. The enclosed proxy is solicited by and on behalf of the Board of Directors of the Company to be used at the Annual Meeting of Shareholders, to be held at the Country Club of Blue Springs, 1600 N. Circle Drive, Blue Springs, Missouri on May 8, 1990 at 2:00 o'clock p.m. and at any adjournments thereof, for the purposes set forth in the accompanying Notice of Annual Meeting of Shareholders. Any shareholder who executes and returns the enclosed proxy has the right to revoke it, in writing, at any time before it is voted at the meeting.

The Company will bear the cost of solicitation of proxies. In addition to the use of the mails, proxies may be solicited personally or by telephone or telegraph by the directors or by a few regular executives or employees of the Company at a nominal cost, and the Company may reimburse brokers and other persons holding stock in their names or in the names of their nominees for their expenses in sending proxy material to principals.

The Board of Directors of the Company has fixed the close of business on March 20, 1990, as the record date for the determination of shareholders entitled to notice of and to vote at the meeting. As of that date, the Company had 4,628,155 shares of Common Stock outstanding and entitled to vote at the meeting.

Each share of Common Stock entitles the shareholders to one vote for each share held. Shareholders have the right to accumulate votes in the election of directors, that is, to cast a total number of votes for one or more nominees for directors equal to the number of shares held times the number of directors to be elected. The shareholder may cast his or her votes for one nominee or distribute his or her votes among two or more nominees.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth the number of shares of Common Stock of the Company owned beneficially as of March 20, 1990, by each person who, as of that date, to the best knowledge of management, was the beneficial owner of more than 5% of the outstanding shares. Common Stock is the only class of voting securities.

Title of Class	Name and Address of Beneficial Owner	Beneficial Ownership(1)	Percent of Class
Common Stock	Wellington Management Company 75 State Street Boston, Massachusetts 02109	344,500(2)	7.4%
Common Stock	The Southgate Trust Company, as Trustee for the Company's ESOP P.O. Box 8356 Prairie Village, Kansas 66208	336,394	7.3%
Common Stock	Robert C. and Mildred I. Harmon 1131 Waterfield Village Dr. Blue Springs, Missouri 64014	318,236(3)	6.9%
Common Stock	K.D.F., a Kansas general partnership P.O. Box 5049 Topeka, Kansas 66605	240,000(4)	5.2%
Common Stock	Beneficial ownership of all officers and directors as a group (21 in group)	627,238	13.6%

(1) All amounts of shares reflect sole voting and disposition power unless otherwise indicated.

(2) Wellington is an investment adviser concerning these shares which are owned by numerous investment counselling clients. It has shared voting power in 83,000 shares and shared dispositive power in 344,500 shares.

(3) Shares are beneficially owned and held of record by Robert C. Harmon and Mildred I. Harmon, as joint trustee for the Mildred I. Harmon Trust holding 174,448 shares and the Robert C. Harmon Trust holding 143,788 shares, with shared voting and disposition power.

(4) K.D.F. is the nominee for a public employees' pension plan, which acquired these shares for investment purposes. Reimer and Koger Associates, Inc. a registered investment adviser, acts as the agent for the pension plan and has the sole power to vote and dispose of these shares, subject to investment policy and guidelines established by the statutes creating the pension plan and its board of trustees. Reimer and Koger Associates, Inc. is not affiliated with the Company or K.D.F. Although not included in the 240,000 shares shown in the table, K.D.F. owns a $2,100,000 debenture which may be converted into 227,027 shares at $9.25 per share.

ELECTION OF DIRECTORS

Ten directors are to be elected at the Annual Meeting of Shareholders for one year or until their successors are elected and qualified. It is the intention of the persons named in the accompanying form of proxy to vote for the election of the nominees listed below. If, for any reason, any of the nominees is unable or declines to serve, the proxies will be voted for the other persons listed and for substitute nominees nominated by management. During fiscal 1989, the Board of Directors held eight (8) meetings. All of the directors nominated for re-election herein, except Thomas F. Eagleton, attended greater than 75% of the meetings for which they were eligible to serve. Mr. Eagleton attended five (5) meetings.

During 1989, the Chairman of the Board of Directors re-established a special nominating committee consisting of Robert E. Harmon, Charles M. Foudree and Herbert M. Kohn for the purpose of proposing nominees for Board positions. This nominating committee is not a standing committee and is not expected to continue beyond this election of directors.

The Audit Committee of the Board of Directors consists of Densil Allen, Thomas F. Eagleton, Bjoern Olsson and Donald V. Rentz. The committee met twice in 1989.

Name of Nominee	Age	Principal Occupation for Last Five Years	Served Continuously as a Director Since	Stock Owned Beneficially
Densil Allen	69	Retired Vice President of Unitog Company, an industrial uniform manufacturer.	7/27/72	600
Charles M. Foudree	45	Executive Vice President of the Company since 9/9/86. Treasurer of the Company since 2/5/74. Secretary of the Company since 2/2/82.	7/27/72	6,160
Thomas F. Eagleton	60	Since 1987, University Professor of Public Affairs, Washington University in St. Louis, Missouri and member of the law firm of Thompson & Mitchell; for more than five years prior to that a United States Senator from Missouri.	5/3/88	–
Robert C. Harmon	77	Consultant to the Company, Chairman of the Board of the Company from 11/17/69 to 2/4/75.	10/2/61	318,236(1)
Robert E. Harmon	50	Chairman of the Board of the Company since 2/4/75. President of the Company since 11/17/69.	10/2/61	202,365(2)
Herbert M. Kohn	51	Since 1986, Chairman of the Board of Linde Thomson Langworthy Kohn & Van Dyke, P.C., legal counsel for the Company. For more than five years prior to that, an attorney with the same firm.	9/1/85	20,400
Douglass Wm. List	34	Management Consultant in private practice since January 1988. Since May 1988 also General Manager of Railway Engineering Associates, Inc.; prior to that Vice President of Marketing and Strategic Planning for CSX Equipment, a division of CSX Transportation since March 1986. Prior to that, consultant with McKinsey Co., Inc. since September 1986.	New	1,000

Name of Nominee	Age	Principal Occupation for Last Five Years	Served Continuously as a Director Since	Stock Owned Beneficially
Gerald E. Myers	48	Self employed management consultant since July 1989; prior to that Vice President of Electronic Materials & Components Group of Square D Company since 1985; prior to that Chairman of the Board, President & Chief Executive Officer of General Semiconductor Industries, Inc. (a wholly-owned subsidiary of Square D) from 7/12/85	5/3/88	10,743(4)
Bjoern Olsson	44	Vice President of Corporate Development of Investment AB Cardo since 1987; prior to that President of SAB NIFE AB, a subsidiary of Investment AB Cardo (formerly Wilh. Sonesson AB) since 1982.	5/6/86(3)	–
Donald V. Rentz	51	President of Morton Cabinet Company, Inc. since 1984; prior to that, 1980-1984, President of Solna, Inc., a printing press manufacturer.	9/9/70	2,000

(1) Shares are beneficially owned and held of record by Robert C. Harmon and Mildred I. Harmon, as joint trustee for the Mildred I. Harmon Trust holding 174,448 shares and the Robert C. Harmon Trust holding 143,778 shares, with shared voting and disposition power.

(2) Does not include 2,200 shares owned by his wife for which Robert E. Harmon disclaims beneficial ownership.

(3) Mr. Olsson had previously served as a director of the Company from 2/2/82 until 5/31/85, at which time he resigned in anticipation of the redemption of all the Company's shares then held by SAB NIFE AB on 6/17/85. He was re-elected on 5/6/86.

(4) Includes 10,743 shares which are held in a living trust.

All amounts of shares reflect sole voting and disposition power unless otherwise indicated.

Robert C. Harmon, a director of the Company, is the father of Robert E. Harmon, Chairman of the Board, President and Director.

On January 10, 1989, Mr. Kohn became a director of Stars To Go, Inc., a publicly held company. None of the other above listed directors serves as a director of any other company with a class of stock registered pursuant to Section 12 of the Securities Exchange Act of 1934 or subject to the requirements of Section 15(d) of that Act or any company registered under the Investment Company Act of 1940.

Robert E. Harmon and Herbert M. Kohn are members of the Board of Directors of The Merchants Bank, Kansas City, Missouri, the Company's primary lender.

EXECUTIVE COMPENSATION

The following table shows the aggregate remuneration paid or set aside by the Company during the fiscal year ended December 31, 1989 to the officers of the Company.

Cash Compensation Table

Name of Individual or Number in Group	Capacities in Which Served	Cash Compensation	Deferred Compensation and ESOP Contribution Allocation
Robert G. Clawson	Officer	$ 130,113	$ 58,438
Charles M. Foudree	Officer-Director	128,733	36,730
Robert E. Harmon	Officer-Director	154,254	60,481
James P. Lemieux	Pres. of Subsidiary	127,919	58,297
Richard E. Risely	Pres. of Subsidiary	123,497	139,941
Officers and key employees as a group (15 persons)		1,405,953	519,388

Messrs. Breshears, Burget, Clawson, Foudree, Harmon, Heggestad and Schmitz have employment contracts with the Company which provide for the payment to such officers of annual salaries of at least $75,517, $56,557, $108,644, $98,700, $118,713, $77,874, and $62,275, respectively, and an annual cash bonus based on consolidated pre-tax profits. These contracts terminate on May 5, 1990. Bonuses for these officers under the Company's pre-tax bonus plan for 1989 totaled $46,000 and were included in the amounts shown in the above table.

Messrs. Lemieux, Meyer, Tucker, Weeks, Jones and Kaiser have employment contracts with wholly-owned subsidiaries of the Company which provide for the payment to such officers of annual salaries of at least $91,650, $72,000, $81,800, $90,000, $94,400 and $80,000, respectively, and an annual cash bonus based on the related subsidiary's pre-tax profits. These contracts have termination dates of May 5, 1990, December 8, 1990, September 1, 1990, October 1, 1992, February 27, 1990 and July 17, 1992, respectively. Mr. Jones' contract was not renewed. Mr. Tucker's contract has been terminated, however, his compensation is included in the above table. Bonuses for these officers under applicable pre-tax bonus plans for 1989 totaled $35,000 and were included in the amounts shown in the above table.

James D. Schembs, President of Cedrite Technologies, Inc., an 80%-owned subsidiary of the Company, has an employment contract under which he is employed on a full-time basis at a minimum annual salary of $100,000. This agreement terminates June 30, 1990. In addition, Mr. Schembs has certain rights as one of the minority shareholders of Cedrite should the Company elect to purchase the remaining 20% of Cedrite stock under the terms of the original stock purchase agreement between the Company, Cedrite Technologies, Inc. and certain individuals.

Richard E. Risely, President of Electro Pneumatic Corporation ("EPC"), one of the Company's wholly-owned subsidiaries, has an employment contract, under which he is employed on a full-time basis for an indefinite period. The contract may be terminated by Mr. Risely or EPC upon 90 days notice. It calls for a minimum annual salary of $100,000, increasing 8% per year for each additional year worked after August 1, 1989. The contract also includes a part-time consulting agreement for two years after termination of employment, at a fee similar to the minimum salary requirement of the employment contract. Mr. Risely has notified the Company of his intention to terminate employment effective April 1, 1990. Noel Smith has accepted the position of President of EPC effective that date. Mr. Smith has an employment contract which expires on February 1, 1993 that provides for a minimum annual salary of $100,000 and an annual cash bonus based on EPC's pre-tax profits.

All of the individuals named above, except James D. Schembs, are also subject to a stock bonus plan whose contribution is based on a percentage of pre-tax consolidated profits. A portion of this bonus is paid in shares of Harmon stock which are subject to a two-year trading restriction and are valued at fair market value at time of issuance. The remainder of the bonus is paid in cash to help offset the individual's income tax expense. Bonuses under this plan totaled $22,000 in 1989 and are included in the table above. This bonus was paid entirely in cash in 1989 because of the high cost of issuing a small number of shares to each of the individuals.

The Company reimburses the officers for the business use of their personal cars. The reimbursement is based upon a combination of the business miles driven and the time the car is available for business use. This reimbursement is not included in the table above.

The Board of Directors' compensation package calls for annual fees of $5,000 plus travel expenses to and from the meetings for each director. In addition, the directors who are not employees of the Company receive $250 for each Board or separate committee meeting attended. The Chairman of the Audit Committee receives $500 per Audit Committee meeting. The package also grants each director an annual option to purchase 1,000 shares of the Company's Common Stock at a price equal to the average market price for the month of May in the year in which the option is granted. This option is exercisable at any time during a two year period from the 1st day of June in the year in which the option is granted. Stock issued under this plan will be subject to a two year trading restriction. In accordance with this package, the Company granted a stock option to purchase up to 1,000 shares to each of its ten directors on June 1, 1988 and June 1, 1989. These options, which expire May 31, 1990 and May 31, 1991, have an exercise price of $6.84 and $7.47 per share, respectively. No options had been exercised at December 31, 1989.

Employee Benefit Plans

The Company has a non-qualified, unfunded deferred compensation plan and trust for officers and key employees, providing for certain payments upon retirement, death or disability. Under the plan, the employees receive retirement payments equal to a portion of the average of the three highest continuous years' compensation. These payments are to be made for the remainder of the employee's life with a minimum payment of ten years' benefits to either the employee or his beneficiary. The plan provides for reduced benefits upon early retirement, disability or termination of employment. The amount of the deferred compensation expense for 1989 was approximately $451,000 and is shown in the second column of the compensation table.

The Company has an Employee Stock Ownership Plan and Trust ("ESOP"). Officers and full-time employees of the Company (excluding employees of Phoenix Data, Inc. and Cedrite Technologies, Inc.) who have been employed for at least six months as of the anniversary date of the ESOP are eligible to participate. Allocations are based on the ratio of an eligible individual's salary to the total salaries of all eligible persons. Standards for vesting are based upon years of service with the Company in accordance with current regulatory guidelines. Under the ESOP, the Company is not required to make any contributions; however, the Company's current intention is to contribute approximately 15% of the participating companies' pre-tax earnings to the ESOP. The Company contributed $1,175,000 and $1,315,000 to the ESOP for the years ended December 31, 1988 and 1989, respectively. The amount of compensation indicated in the second column of the table includes amounts allocated March 31, 1989 from the December 31, 1988 contribution.

On September 1, 1988, the Company granted options to purchase up to an aggregate of 250,000 shares to various officers of the Company and its subsidiaries. The options, which expire September 1, 1995, have an exercise price of $7.05 per share. Options for an additional 64,000 shares were granted on September 1, 1989 with an exercise price of $8.60 per share which expires on August 31, 1996. Stock issued under this plan will be subject to a two year trading restriction. No options had been exercised as of December 31, 1989.

Certain Transactions

The Company leases an office located in Grain Valley, Missouri, from Robert C. Harmon at a current rate of $24,000 per year. After October 1991, the payments will be increased based on changes in the Consumer Price Index. The Company also has four successive five year renewal options on terms similar to the base lease. In addition, the Company has the right of first refusal should the property be placed for sale. In the years ended December 31, 1985, 1986, 1987, 1988 and 1989 the Company made capital improvements to this leased facility, in the amount of $6,605, $10,897, $0, $0 and $24,400, respectively. Improvements consist primarily remodeling of the office facilities. Management believes that the rental payable by the Company under the lease is reasonable and either comparable to or more favorable than rentals which the Company would have been required to pay to an unaffiliated lessor.

Herbert M. Kohn, director of the Company, is a member of the firm of Linde Thomson Langworthy Kohn & Van Dyke, P.C., which the Company has retained for several years as legal counsel. Such firm has also been retained by the Company for the current year.

APPROVAL OF SELECTION OF AUDITORS

Management recommends voting to approve the selection of KPMG Peat Marwick as Auditors for the Company for the forthcoming fiscal year. This firm has served continuously as Auditors for the Company since 1969.

A representative of KPMG Peat Marwick will be present at the shareholders' meeting and will be available to make a statement if he or she desires to do so and to answer appropriate questions asked by the shareholders.

SHAREHOLDER PROPOSALS

In the event any shareholder intends to present a proposal at the Annual Meeting of Shareholders to be held in 1991, such proposal must be received by the Company, in writing, on or before November 12, 1990, to be considered for inclusion in the Company's next Proxy Statement.

OTHER MATTERS

Management is not aware of any other matters which may come before the meeting. However, if any other matters properly come before the meeting, it is the intention of the persons named in the accompanying form of proxy to vote the proxy in accordance with their best judgment on such matters.

BY ORDER OF THE BOARD OF DIRECTORS

Robert E. Harmon
Chairman and President

March 26, 1990